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A NATIONWIDE STUDY OF THE ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION AT THE STATE LEVEL. VOLUME ONE. FINAL REPORT.

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DESCRIPTORS- *VOCATIONAL EDUCATION, *NATIONAL SURVEYS, *STATE DEPARTMENTS OF EDUCATION, STATE FEDERAL SUPPORT, STAFF ROLE, ROLE PERCEPTION, SELF EVALUATION, MEASUREMENT INSTRUMENTS, EXPENDITURES, *EDUCATIONAL ADMINISTRATION, *PROGRAM EVALUATION, TECHNICAL EDUCATION, VOCATIONAL EDUCATION TEACHERS, PROFESSIONAL PERSONNEL, ORGANIZATION, STUDENT ENROLLMENT, EDUCATIONAL PROGRAMS, LEADERSHIP RESPONSIBILITY,

THE OBJECTIVES OF FIVE RELATIVELY INDEPENDENT STUDIES WERE TO DESCRIBE AND INDICATE DIFFERENCES OF ORGANIZATION, PERSONNEL, AND SERVICE IN THE STATES, IDENTIFY AND ANALYZE PERCEPTIONS OF STATE AGENCY ROLES AND FUNCTIONS, ANALYZE ACTIVITIES OF SELECTED PROFESSIONAL STAFF POSITIONS, DESIGN AND FIELD TEST AN INSTRUMENT FOR SELF ANALYSIS OF STATE AGENCIES, AND ANALYZE STATE AND FEDERAL EXPENDITURES FOR VOCATIONAL PROGRAMS. DATA WERE OBTAINED IN VISITS TO THE STATES AND PUERTO RICO THROUGH GROUP AND INDIVIDUAL INTERVIEWS AND RECORDS, AND OTHER DOCUMENTS. CONCLUSIONS INCLUDED--(1) THERE WAS GREAT VARIATION AMONG THE 50 STATES IN THE RATIO OF PROFESSIONAL STAFF MEMBERS IN THE STATE AGENCY TO VOCATIONAL TEACHERS, (2) THE STATE DEPARTMENT OF VOCATIONAL EDUCATION WAS LESS CONFIDENT ABOUT THE JOB IT WAS DOING THAN WAS THE GROUP TO WHICH IT WAS IMMEDIATELY RESPONSIBLE, (3) ALL GROUPS INDICATED THE MAJOR PORTION OF THEIR TIME WAS SPENT PLANNING, CONSULTING, COMMUNICATING, AND TRAVELING, WITH THE MAJOR FOCI PROBLEM IDENTIFICATION AND DEFINITION, AND PROGRAM DESIGN AND DEVELOPMENT, AND (4) THE TOTAL EXPENDITURES MORE THAN DOUBLED BETWEEN 1962-63 AND 1965-66. A "FORMAT AND CRITERIA FOR SELF-ANALYSIS BY STATE AGENCIES FOR VOCATIONAL-TECHNICAL EDUCATION" WAS DESIGNED, DEVELOPED, PARTIALLY REFINED AND INITIALLY FIELD TESTED. VOLUME II (VT 004 418) CONTAINS THE APPENDIX TO THESE STUDIES. (EM)

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A NATIONWIDE STUDY OF THE ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION AT THE STATE LEVEL

VOLUME ONE (Of Two Volumes)

August 1967

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A Nationwide Study of the Administration
of Vocational-Technical Education
at the State Level

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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A NATIONWIDE STUDY OF THE ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION AT THE STATE LEVEL

VOLUME ONE (Of Two Volumes)

Project No. 6-2921
Contract No. OEG-4-6-000542-0001

J. Chester Swanson
Project Coordinator

August 1967

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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The very nature of this nationwide study of state-level administration required the active participation of many persons representing a wide spectrum of groups associated directly or indirectly with vocational-technical education throughout the country. Project staff depended heavily upon the cooperation of State Directors of Vocational Education and their staffs in securing the basic data for the study. Thus, we owe our gratitude to each of the several thousand persons responding to the group and individual interviews, the state division staff members who participated in the position analysis study, and to all the members of the forty state Departments of Education for making the study possible.

Among the many individuals and groups who provided general counsel in the development and completion of the Project was the Advisory Committee of State Directors of Vocational Education, appointed by the National Association of State Directors of Vocational Education (Walter Markham, President). The committee members were

John A. Beaumont	Illinois
M. A. Browning	Texas
J. R. Cullison	Arizona
C. L. Greiber	Wisconsin
Everett P. Hilton	Kentucky
J. D. Ingram	Alabama
Ernest Kramer	Washington
Walter Markham	Massachusetts
Joseph Murphy	Connecticut
Mark Nichols	Utah
Byrl Shoemaker	Ohio
Cecil Stanley	Nebraska
John W. Struck	Pennsylvania
Robert Winger	Michigan

Many state superintendents of public instruction gave of their time and efforts throughout the study. Owen Kiernan, Commissioner of Education of Massachusetts as Chairman of the Council of Chief State School Officers made trips to the University of California, Study Center and gave consultative service at other times.

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Dr. Herbert H. Hamlin served as general consultant to the Project, providing assistance and support to all the professional staff in the development and implementation of their various studies.

The professional personnel provided the continuing planning, operation and evaluation of the Project. For a project so vast, the staff was necessarily large and composed of persons with varying skills and knowledge.

The Project was initiated by J. Chester Swanson, Professor of Educational Administration, School of Education, University of California, Berkeley. Dean T. L. Reller gave encouragement and significant assistance during the year-and-one-half in which the Project was developed. Dr. Swanson continued as Project Coordinator with the major administrative responsibility during the total period of the Project. Allen Lee was chosen as Project Director and maintained the full-time supervision of the Project. Edgar Morphet was Associate Director on a part-time basis and Boyd Applegarth was Assistant Director on a full-time basis during the period of the Project.

The many staff members and consultants who contributed to the study will be acknowledged in relation to their major activities. Mrs. Margaret Hall and Miss Patricia Cone served as editors of this report. The supporting staff under the able administration and supervision of Mrs. Laura Sellars (for the first nine months of the Project) and Mrs. Lou Tabatabaian (for the last half), deserve special commendation for their loyal and devoted efforts throughout the study, and finally, in preparing this manuscript.

To all of these we recognize their effective contribution and to the many we can not name, we express our sincere appreciation.

J. Chester Swanson,
Project Coordinator

Berkeley, California
July 31, 1967

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A Nationwide Study of the Administration
# of Vocational-Technical Education
at the State Level

I. INTRODUCTION

A. Statement of the Problem

During recent years, the urgent need for a high-quality program of education for all children and youth has become recognized. Much progress has been made in improving the status and quality of education at all levels. However, this progress has been uneven, with perhaps the greatest improvement in areas such as science, mathematics and foreign languages. There is a serious question whether the progress in vocational-technical education has kept pace in many parts of the nation and whether current policies, programs and procedures are adequate to meet present and emerging needs in our rapidly changing economy.

Presumably, deficiencies in vocational and technical education programs of local agencies can be reduced or eliminated through more effective leadership or influence from the state and national levels. With vastly increased Federal aid and changing roles for such agencies as the Office of Education, there is some apprehension about undesirable Federal control. Many contend the Federal government should not attempt to provide direct assistance to local school systems. Some Federal leadership and financial assistance are necessary, but these should be implemented through the appropriate state agency.

Assuming that the American public will neither accept nor be asked to accept complete Federal financing and control, it then becomes imperative to have high-quality and effective leadership in vocational-technical education at the state level.

State Departments of Education (and also vocational-technical staffs) vary considerably in size, organization, function and otherwise. The average state department in 1963-64 had 75 professional staff members available to work on educational problems and programs and with an average of 425 districts.

The 75 State Department of Education staff members worked directly with 1,303 schools and about 20,000 local school people--for the purpose of maintaining standards, providing teacher and administrator training and for the general improvement of education including buildings, materials, methods and teaching.

Some State department consultants (18) estimated their average "visit" to schools to be one half-day each seven years. A few were able to approach the level of one visit in each two-year period. Obviously, this situation precluded reliance upon the procedure of working with individual principals and teachers--especially when one takes cognizance of the time required for desk work and travel. It would be unrealistic to increase the State department staff believing that a larger staff alone could (under traditional procedure and organization) effectively influence change for improvement.

The President's Panel of Consultants on Vocational Education (11) and others have spotlighted such widespread deficiencies in vocational-technical education as:

1. Vocational offerings which are limited in variety and in terms of numbers of persons served
2. Programs which are unrealistic in terms of the needs of labor
3. Inadequate concern and provision for the anticipated 21 million non-college graduates who are entering the labor market during the 1960's and the added millions who need to be retrained in the years ahead
4. A need for more effective State leadership to influence local programs.

Major challenges confront state educational agencies in regard to such problems as: (1) the improvement of education programs; (2) local-state-Federal relationships; and (3) the roles of various educational agencies.

Changes are occurring in State education agencies, including those with responsibility for vocational-technical education. These are being precipitated by socioeconomic developments in the country and to some extent accelerated by legislation such as the Vocational Education Act of 1963 (P.L. 88-210) and the Elementary and Secondary Education Act of 1963 (P.L. 89-10).

Thus, there appeared to be a need to study these changes and to gain a comprehensive view of the current status of various facets of state-level administration of vocational-technical education. Hence, the purpose of this Project was to provide pertinent, accurate information for use, primarily, by state agency staffs in their efforts to meet the major challenges confronting them.

B. A Selective Review of the Literature

The literature which specifically contributed to the formulation of research objectives, basic assumptions (or hypotheses) and methodology of the several individual studies is reviewed in subsequent sections of this report. Only that literature which pertains to the purpose of and rationale for the Project as a whole is reported below.

An important resource was Dr. Robert F. Will's, State Education Structure and Organization (33). It provided a basic framework for analyzing organization and structure and for studying the change process.

Three recent studies, one in New York State and two in California, focused attention on state organization for educational change. The New York study found that the state department of education (SDE) attitude about change influenced educational change throughout the state (5:37). This same report indicated that local educators looked to the SDE to assume a strong-leadership-for-change role, but not to impinge upon basic decision-making at the local district level. The state division of vocational education (SDVE) faces challenges similar to those of the state departments of education generally.

A recent study of the California State Department of Education (20) concluded (among other things) that:

1. The California State Department of Education, as the staff and administrative agency of the State Board of Education, has a vital role to play in the state level planning process.

2. As it presently functions, the State Department of Education is not capable of its full potential in providing state support to the process of educational development. Major changes are indicated.

A later study (19) in California brought out the following observations:

> The overlay of new substantive educational change on more traditional styles of administration and forms of organizational structure has resulted in a variety of stresses:
>
> a. Inhibited communication and understanding and lack of agreement on the definition of district goals and objectives.
>
> b. Inhibited development and coordination of plans and programs to achieve those goals and objectives.
>
> c. Less than optimum utilization of valuable professional resources and implementation of appropriate change.

The July, 1965 White House Conference on Education emphasized the need for an analysis of the role and function of state-level educational agencies.

> ". . . Therefore, if our educational system is to fulfill its functions of providing the skilled manpower we need, the intelligent and informed citizenry we require, and the avenue for upward social mobility that we demand and desire for all citizens, action must be taken now to find ways to strengthen our state governments that have the primary responsibility for providing educational opportunity." (21:42)

> ". . . the role and function of state departments of education need considerable critical appraisal. Even a cursory examination of the existing patterns of state organization in this area reveals a lack of any clear-cut notion as to what the role and function of these departments should be." (21:53)

By statute (P.L. 88-210, section 5(a), sub-sections 3, 5, 6, 7) the SDVE is given a regulatory role in that it administers the state plan for vocational education which: (3) "provides minimum qualifications. . ."; (5) "sets forth such fiscal control. . ."; (6) "provides assurance that the requirements of section 7 will be complied with..."; (7) "provides for making such reports..." The same statute charges the SDVE with leadership responsibility for projecting employment needs, promoting cooperation between vocational programs and the State Employment Service, and communicating vocational opportunities in the state to local schools and vocational graduates.

State education agencies developed primarily as inspectorial, regulatory, clerical, financial, and advisory agencies to support local education agencies.

> ...The establishment of a permanent central agency for education in each state is of fairly recent origin. The original and principal continuing role of these central agencies has been regulatory and clerical. (32:64-65).

> ...The state authorities generally declare minimum educational standards for the school program, disburse state funds to the local districts, set minimum requirements for the certification of teachers, and sometimes buy and prescribe textbooks for grades. (8:124)

Thurston and Roe have suggested that the state education agency have three principal functions: leadership, administration of special agencies and services, and regulation. (28:117-130)

> Regulatory functions are those which are performed to assure that the basic provisions for education...are followed,... For the most part, these regulatory activities include enforcement in regard to minimum standards in education. (28:79)

The Council of Chief State School Officers also has suggested that the state education agency is a leadership-regulatory agency.

> State departments of education are responsible for enforcing laws and administrative rules and regulations that require local school districts to meet particular standards and comply with specific conditions. In carrying out this responsibility state departments are exercising state-wide regulatory controls. State departments are likewise responsible for providing professional and technical assistance to local school districts to help them meet and exceed the standards prescribed by state law and administrative rules and regulations. In carrying out this responsibility state departments are exercising leadership. (10:10)

> Regulatory responsibilities are a direct consequence of state authority for education. While states have delegated broad authority to local school districts for the management and operation of the public schools they have also established safeguards to guarantee minimum performance...The establishment of standards and the accompanying power to enforce compliance with them are commonly termed the regulatory function. (10:11)
>
> The state department of education should be the leadership center of the state system of education. Effective leadership contributes significantly to the improvement of state and local education programs. (10:13)

Grant Venn discussed the state education agency both in terms of its traditional role, and its emergent role in the face of changing demands.

> Although state boards of education were mainly clerical, statistical, and regulatory offices in the early years, the functions of these agencies have increased and broadened in scope as changes have taken place in American society. (32:65)
>
> The crucial role of the state education agency today is statewide leadership for educational planning, programs, and services. (32:66)
>
> A recent dramatic increase in federally supported activities has induced a new major role for state education agencies; namely, statewide planning, projecting, and interpretation of educational development needs. Most state education agencies have been ill-prepared to assume the added leadership responsibility. (32:66-67)

Studies of the SDE have indicated a need for detailed research and development in state school administration, as well as lending support to the leadership-regulatory concept of state education agencies. R.E. Bills (4), in studying the perceived actual and ideal roles of county superintendents and of staff at the West Virginia Department of Education, found four basic points of orientation to the role of the SDE. These four were:

1. The Rendering of Services

2. The Promotion of Change
3. The Exercise of Control
4. A "Big Brother", or Overseer Function.

The study suggested that "distinguishing features of an organization emerge not from the acceptance or rejection of these categories or role performance, but in the relative emphasis assigned to each", and raised questions regarding the emphasis upon each of the four role categories.

> In a period of profound and rapid change, it is not enough for leadership simply to be in tune with the times; the need is for a type of leadership which can help set the tune for the times. This being the case, should not factor 2--the promotion of change--become the Department's future high value? Closely related, would we not find factor 1--the rendering of services--compatible with the objective of change in and through education? If so, the factors of control and overseeing would correspondingly diminish in importance. (4)

The concept of involvement is crucial for change. Especially at the state level there is a need to enlist the help and support of a broad segment of the economic and political community as well as total educational resources in order to establish effective policy and implement new ideas for educational programs. The need for involvement of all segments of education in planning for the future has been indicated.

> ...Hopefully, leadership in making these (educational) decisions will come from all segments of the educational community. Up to now, consistent educational leadership has all too frequently been absent. If the educational community does not reach a consensus on how the job is to be done, it may be told what to do through categorical financial aid (as happened under the Smith-Hughes Act) or some governmental agency may be directed to take over the job. (32:154)
>
> The role of the state department has undergone a fundamental shift; it no longer is inspectorial. State departments have the resources to give educational leadership, and maybe this leadership function tends to be conceived in the triangular relationship with higher education and local school districts.

> There are highly competent personnel in all three agencies and all levels and the problem is to coordinate a team approach so that a maximum educational opportunity for youngsters will result. (32:1159)
>
> The state department of education either must develop the quality of personnel needed for its new leadership role, or somebody else will, and the state department will become a strictly vestigal agency, as it has in many states. (32:1157)
>
> ...A stronger state department of education is required...however, strength makes itself felt through the quality of leadership rather than through regulation. (32:408)

Recently, two trends were noted in the development of educational policy. One of these trends was the strengthening of state governments and improvement of state education agencies. Perhaps now, with strong pressure from the federal government, the SDE will accept the leadership role.

> ...Perhaps the greatest new development on the policy front to be expected within the next half generation is the shifting notion of who controls public educational policy. Two trends are evident here. On the one hand, there are the proponents of a national educational policy set in Washington and those who advocated the maintenance of the present system, whereby educational policy is set on a state and local basis. If local control of educational policies is to be preserved, the states will have to step in. (22:118)

C. Focus and Objectives

The focus of the Project was upon the organization, functions and activities of state agency administration of vocational-technical education, with the purpose of providing pertinent information to directors of vocational education and their staffs which might contribute to enhancing their leadership role and improve state agency administration.

A further goal was to develop techniques or instruments for implementing the central purpose stated in the Project Proposal--"to expedite improvement in the scope, quality and coverage of vocational and technical education in local schools, by increasing the effectiveness of state agency leadership, service and administration in this field of education."

The Objectives

1. To prepare a detailed description of the administration of and services provided for vocational-technical education in each state, indicating the differences among states in organization, personnel and services provided and identifying current trends in administrative organization functions and activities.

2. To identify and analyze perceptions of what the roles and functions of state agencies for vocational-technical education are and what they should be.

3. To analyze activities of selected professional staff positions.

4. To design and field-test a format and criteria for self-analysis by state agencies for vocational-technical education.

5. To analyze the expenditures for vocational education through the state agency for these programs which are operated in public schools and related to Federal funds provided to states for this purpose. (Special emphasis was given to changes in expenditures following passage of the Vocational Education Act of 1963).

II. METHOD

A. Organization of the Project

The Project was divided into several more or less independent studies, each designed to meet one of the above-stated objectives. Sections III through VII of this report describe in detail the research design and methodology for each study.

The Project Director worked alternatively with the staff members individually and as a group to assure adherence to the approved proposal and to achieve integration of the several studies (sub-units) into a coordinated whole.

Program Evaluation and Review Technique (PERT) was applied to the total project in order to facilitate the integrated planning and implementation of the various sub-units.

This analysis of the process of the total project was suggested by a member of the U.S. Office of Education staff who thought such a complex project would benefit from such an analysis. It was thought that the method developed might also serve as a guide for other major complex projects.

One staff member, Miss Sara Pierce, was responsible for this unit of the project.

B. Program Evaluation and Review Technique

Program Evaluation and Review Technique (PERT) is a method for planning, replanning and for evaluation. Developed in the late 1950's by the Navy Special Projects Office, it was used in the development of the Polaris submarine. PERT now has wide use in industry and some in government.

PERT has not been used extensively in education in the past. However, it should have the same degree of effectiveness with educational research and development projects that it has had with industrial research and development.

PERT is organized by a "top-down" method. From the objectives which are to be achieved, subdivisions are made in order to identify all elements of the project. This insures that the major objectives are supported in all phases.

Application of PERT to this Project is described below. A detailed discussion of PERT may be found in Appendix II.

Three months after the beginning of the Project, Miss Sara Pierce was employed to serve as staff PERT technician. Prior to any data being collected for the implementation of PERT, the objectives of the Project had been established. The Project had also been divided into the several sub-units, which were to be active throughout the Project and thus to be PERTed.

A consultant* spent several days with the Project staff. He introduced them to the basic uses and methods of PERT. He also worked with the staff technician on the techniques needed to implement PERT for the Project.

In July the staff technician completed a seminar and workshop at the PERT Orientation and Training Center of the Department of Defense in Washington, D.C. This seminar dealt with the intricacies of methodology and analysis reports.

The Project Director worked closely with each staff member in developing, coordinating and implementing details of research design and plans in general, including formal PERTing operations. The staff PERT technician attended the many staff meetings in which details were discussed and was responsible for the machine processing, key punch, computer printout arrangements, chart preparation and technical explanations necessary in connection with the orientation of staff and PERT implementation.

The first step in PERTing this Project was to break the total Project and its objectives into elements. The Project had been divided into sub-units which were organized along similar lines and thus the Project was treated as a whole in this step.

---

* .Dr. Desmond L. Cook from the Ohio State University

In breaking the elements into activities and events and developing a network for them, each staff member responsible for one of the seven sub-units was consulted individually.

After some groping and learning on the part of all concerned, a D.C.S. copy of the NASA-PERT "C" program was adjusted to the University 7094 D.C.S. computer and became operational.

Once PERT was operating, the decision was made, in accordance with the plan of expected benefits, to retrace steps and make a run of the data as of July 1, 1966. The reason for this run was to give some continuity to the PERT of the Project and a more complete basis for evaluating its possible effectiveness. July 1 was chosen because of staffing patterns which would have made an earlier run impractical and because this would be one year before the end date of the Project.

The procedure for simulating this run was to begin with the old and incomplete data which had been collected by June 1, 1966, and obtain staff cooperation in completing the data as they could remember it from that date. The staff realized it would be simpler and more beneficial to go back to the starting date, January 1, 1966, for each sub-unit, and, therefore, this was done for the simulated run. The staff members completed the data as if they were just beginning the work on their sub-units. Although the date given for the run was January 1, 1966, it actually was seven separate runs. The starting date for each run was the date work was begun on a sub-unit. These dates varied from January 1 to July 1, 1966.

After the first actual run, the staff reevaluated progress and made some major changes.

The last run of PERT for the Project was made April 28, 1967, to encompass the first 16 months of the 18-month Project. All changes were fed into the data deck to up-date it effective that day. The staff was then able to see just how effective the changes were which had been made as a result of the January run.

There were several problems encountered in the PERT for this Project. The first computer program which was thought to be compatible for this Project and available hardware was not appropriate for the computer at the University of California. Programmers at the University Computer Center worked with the program for some weeks in an attempt to adapt the Standard 7094 to a 7094 D.C.S. computer. Finally a D.C.S.

copy of the NASA-PERT "C" program was obtained from Ames Research Center and additonal weeks were spent ironing out the difficulties in this program. By the first of August it was possible to run some introductory material for one sub-unit.

The situation was complicated by the fact that, although the Project starting date was January 1, 1966, formal notification was not received until July 1966, and the staff was gradually increased from January to September. As staff were gradually recruited and began work, the Director necessarily had to spend a great deal of time in orientation.

PERT was new to all concerned, and there was recurring need to orient new staff. Ideally, the staff should have been oriented together. For many reasons, latecomers had to conform to some of the plans (PERTing) done by others. Some staff had difficulty in making detailed plans as rapidly as was necessary, but subsequent experience demonstrated the value of planning--even though often this had to be tentative and subsequently revised. Some staff, because of heavy schedules, found it difficult to orient themselves to the total planning process.

The use of PERT lent considerable impetus to this Project and gave the staff valuable experience in "learning by doing" with an operable PERT.

C. Consultation and Coordination

Several meetings and conferences were held with individuals and professional organizations for purposes of general orientation, support, cooperation and involvement. Staff members participated in and orally reported progress to meetings of the National Association of State Directors of Vocational Education, the Council of Chief State School Officers, the American Vocational Association, the Office of Education (HEW) and others. Seven meetings were held with groups of state directors and chief state school officers.

The Project staff were alert to the need to coordinate their activities with those of two other centers for research and development projects in vocational-technical education. Seven meetings were held with representatives of Ohio State University and the University of North Carolina for this purpose.

D. Procedure for Data Collection

To the extent possible and practical, data collection for each of the studies was combined. All primary sources of data and some secondary sources were obtained by means of visits to each state.

The procedures for securing data followed a similar pattern in each state.

a. Readiness Visits

The visits were held in each state to orient and prepare the state for subsequent data collection sessions. The format of each readiness visit followed a similar pattern: a Project staff member met with the chief state school officer, the state director of vocational education and some of their staff in both general and vocational education to explain the overall purposes of the Project and to elicit their cooperation and participation in collecting the required data.

Following this initial visit, a letter outlining the purposes of the Project, a description of the sub-units of the research effort and a list of categories of persons requested to participate in the subsequent major data collection meeting.

b. Data Collection Visits

The purposes of the second state visit were: (1) to explain the Project; (2) to help participants understand some of the needs and possibilities for change; and (3) to secure data required for the study and analysis for each of the sub-units.

This second visit usually followed the readiness meeting after about one month. The agenda for this visit followed a similar pattern in all states: On the first day, a large group meeting with (1) a flannel board presentation and overview of the Project; (2) a division of participants into small groups for the purpose of administering the Group Interview Guide; (3) a second flannel board presentation and discussion of "The Process of Change;" (See Appendix I) and (4) detailed group discussions about opinions, suggestions, problems, strengths, weaknesses and questions about the status of state-level administration of vocational-technical education.

A second day was used for individual interviews and the collection of reports and documents reflecting the current status, including the financing, of the state division.

In 16 states visited, a third day was spent preparing the state division professional staff to participate in the position analysis study.

The following map indicates the states visited and the types of data secured. Table 1 (page 17) summarizes the number of persons participating in data collection in each state.

Data from the following sources were secured by means of state visits: (1) the Group Interview Guide, (2) Individual Interviews, (3) Personal Recond of Work Activity form, and (4) various documents and other materials. The last source of data was obtained also by mail from the states, directly from the U.S. Office of Education, or from the library of the University of California.

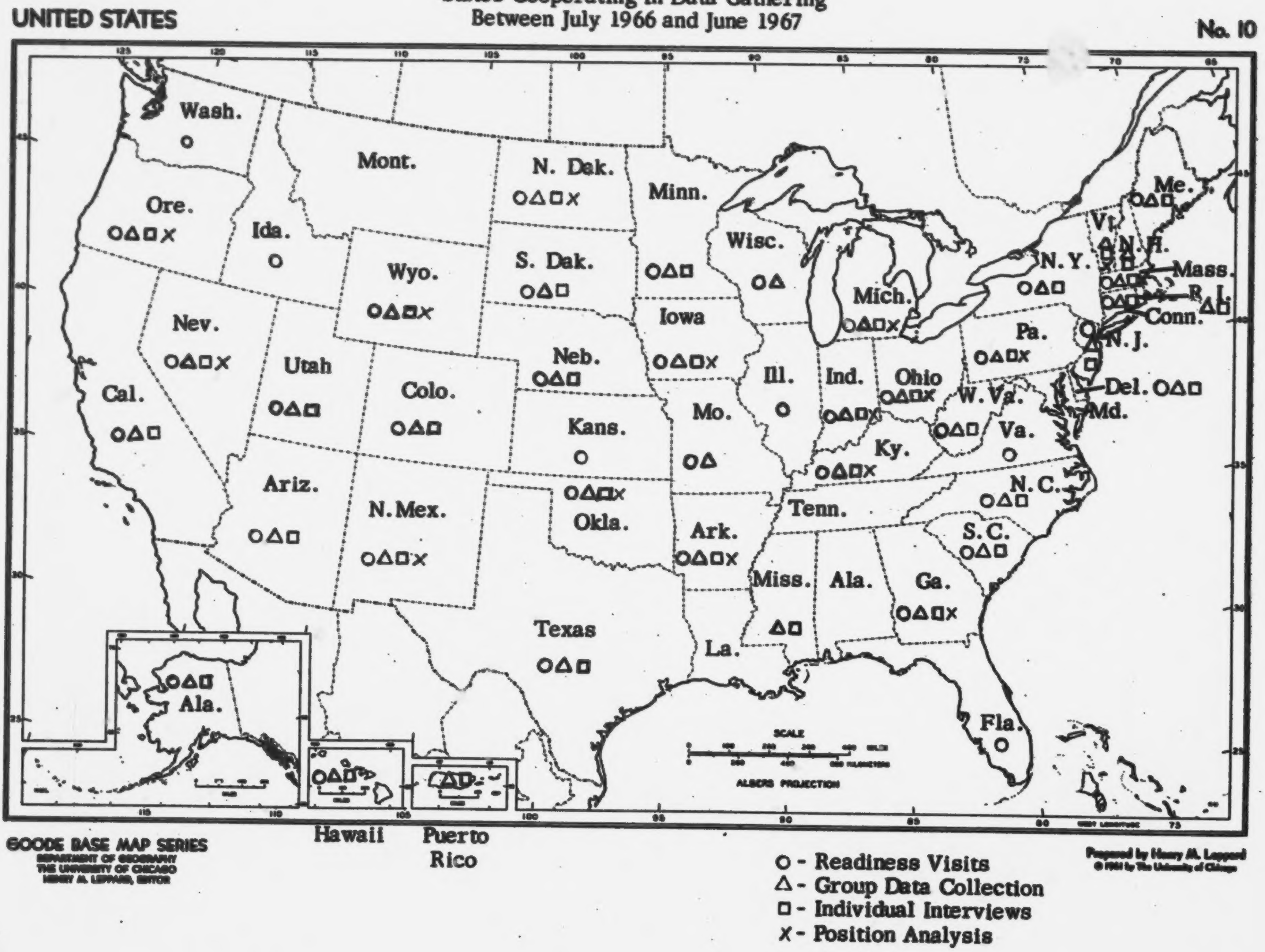
E. Data Processing and Preliminary Analysis

All data collected both in the field and through secondary sources were centrally controlled in the Project office in order to preserve confidentiality and to maintain a complete record of all data received. After the data had been checked for completion and accuracy, they were released for use to the several chairmen of the various studies (sub-units).

Data for two studies (Perceptions and Position Analysis) were processed through an arrangement with the Survey Research Center, University of California, Berkeley. Some data processing and analysis made use also of the Computer Center of the University of California.

Specific methods of analysis are discussed for each study in the following sections of this report.

States Cooperating in Data Gathering
Between July 1966 and June 1967


UNITED STATES
No. 10
Wash. ○
Ore. ○△□X
Ida. ○
Mont.
Wyo. ○△□X
N. Dak. ○△□X
S. Dak. ○△□
Minn. ○△□
Wisc. ○△
Mich. ○△□X
Nev. ○△□X
Utah ○△□
Colo. ○△□
Neb. ○△□
Iowa ○△□X
Ill. ○
Ind. ○△□X
Ohio ○△□X
Pa. ○△□X
N.Y. ○△□
Me. ○△□
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Md.
W. Va. ○△□
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Cal. ○△□
Kans. ○
Mo. ○△
Okla. ○△□X
Ariz. ○△□
N. Mex. ○△□X
Ark. ○△□X
Tenn.
N.C. ○△□
S.C. ○△□
Miss. △□
Ala.
Ga. ○△□X
Texas ○△□
La.
Fla. ○
Ala. ○△□
Hawaii ○△□
Puerto Rico △□
SCALE
ALBERS PROJECTION
GOODE BASE MAP SERIES
DEPARTMENT OF GEOGRAPHY
THE UNIVERSITY OF CHICAGO
HENRY M. LEPPARD, EDITOR
Prepared by Henry M. Leppard
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○ - Readiness Visits
△ - Group Data Collection
□ - Individual Interviews
X - Position Analysis

TABLE 1

E. Listing of States and Numbers of Respondents Involved in Data Collection Between July 1966 and June 1967

	State	Group Data-Gathering Visit--Number of Group Interview Respondents	Individual Interviews--Number of Respondents	Position Analysis--Number of Respondents
1.	Alaska	29	10	--
2.	Arizona	53	13	--
3.	Arkansas	59	12	7
4.	California	32	--	--
5.	Colorado	56	12	--
6.	Connecticut	47	6	--
7.	Delaware	55	11	--
8.	Georgia	31	12	7
9.	Hawaii	43	11	--
10.	Indiana	44	16	7
11.	Iowa	54	7	7
12.	Kentucky	54	12	6
13.	Maine	38	13	--
14.	Maryland	58	13	--
15.	Massachusetts	59	9	7
16.	Michigan	43	12	6
17.	Minnesota*	37	6	--
18.	Mississippi	46	11	--
19.	Missouri	41	--	--
20.	Nebraska	28	6	--
21.	Nevada	46	12	7
22.	New Hampshire	49	12	--
23.	New Jersey	68	14	--
24.	New Mexico	40	13	7
25.	New York	45	4	--
26.	North Carolina	61	15	--

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* North Dakota instruments were lost in the mail, and Minnesota and Texas completed too late to analyze and include in this report.

	State	Group Data-Gathering Visit--Number of Group Interview Respondents	Individual Interviews--Number of Respondents	Position Analysis--Number of Respondents
27.	North Dakota*	34	10	7
28.	Ohio	67	12	7
29.	Oklahoma	54	9	7
30.	Oregon	56	13	6
31.	Pennsylvania	53	12	7
32.	Puerto Rico	44	11	--
33.	Rhode Island	53	14	--
34.	South Carolina	52	13	--
35.	South Dakota	30	11	--
36.	Texas*	78	7	--
37.	Utah	47	19	--
38.	Vermont	31	14	6
39.	West Virginia	36	13	--
40.	Wisconsin	37	--	--
41.	Wyoming	44	12	5
	Total Respondents	1932	432	106

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* See footnote, previous page.

III. THE CURRENT STATUS OF THE ORGANIZATION FOR ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION AT THE STATE LEVEL

This study of the administration of vocational-technical education begins with a presentation, in summary form, of the present organization and activities under the direction of each state board of vocational education. This summary is presented in ten sections under the following titles:

I. Legal Basis for the Administration of Vocational-Technical Education
II. Selection of State Officers for the Administration of Vocational-Technical Education
III. Position of Vocational-Technical Education in the State Administration of Education
IV. Organization for the Administration of Vocational-Technical Education
V. Professional Staff for State Administration of Vocational-Technical Education
VI. Teachers in Vocational-Technical Programs
VII. Enrollments in Vocational-Technical Programs
VIII. Teachers and State Staff in Vocational-Technical Programs
IX. Schools Providing Vocational-Technical Programs
X. Income and Expenditures for Vocational-Technical Education

This unit of the total project was under the immediate direction of J. Chester Swanson, assisted by a research staff consisting of Paul Reiling, Phyllis Warren, Patricia Cone and Harold Kinser. The following persons served in a consultative manner to this unit of the project:

Walter M. Arnold, Assistant Commissioner, U.S. Office of Education, and Director of the Division of Vocational and Technical Education

J. R. Cullison, State Director of Vocational Education, Arizona

John Bunten, State Director of Vocational Education, Nevada

Wesley Smith, State Director of Vocational Education, California.

This study was often called a "snap-shot picture" of the state activities for vocational education. However, it soon became apparent to the staff that conditions were changing so rapidly that a "snap-shot" created a picture which was likely to be distorted. When the attempt was made to use recent data, they were either not available or were subject to revision. When data were used which were stable, the data and their analyses were obsolete in many respects. This was particularly true of the 1965-1967 period because of the effects of the recently increased appropriations under Public Law 88-210.

These changing conditions, and the fact that this information was taken from so many different sources, made it impossible to completely justify all data with other sources or to make it consistent within the report.

The major sources of information for this unit of the study were:

1. A Review of Activities in Federally Aided Programs, Vocational and Technical Education--Fiscal Year 1963.
2. Summaries of annual reports of state boards for vocational education, fiscal years 1965 and 1966. These data will later be published under the title of item "1" above for fiscal years 1965 and 1966.
3. The state plans for vocational education.
4. The state directories of professional staff.
5. The current organizational charts for the state departments of education and the state divisions of vocational education.
6. The education code for each state.

All State Directors of Vocational Education and many of their staff contributed to this study in a significant manner.

Introduction

This is an attempt to summarize a very complex situation--the organization and program activities of vocational education at the state level in all 50 states.

In striving for simplicity, the summarization may make it easy for the reader to draw conclusions and make generalizations which the details of the situation would not justify. Because a number of sources were used to obtain recent data, some of the details in the tables of the individual states may not be consistent with data published elsewhere.

One of the difficulties of such a study is that definitions are not standard for all the states and even the breadth of activities within the responsibility of a single state division of vocational education varies widely.

An attempt is made here to show, in organizational charts and listings of professional staff, the total activities and responsibilities of each division of vocational education. However, when specific vocational education tabulations are shown, such as enrollments, teachers, schools, etc., the objective is to present only program activities which conform to the definition of vocational education as given in the most recent Federal legislation for vocational education.* This means that where state divisions of vocational education have responsibilities for industrial arts, guidance other than vocational guidance, home economics which does not train for gainful employment, etc., the data for these are not reported as vocational education activities. At times, it is difficult to differentiate between some of these activities.

Legal Basis for the Administration of Vocational-Technical Education

The constitution of each state provides for the establishment, organization and operation of a system of public schools. But, no state constitution specifically mentions vocational education. The statutory laws of all states, however, do mention vocational education. In all states, the statutory law accepts the acts of Congress which "provide for the promotion of vocational education" and designates a state board to act as the State Board for Vocational Education. This uniformity of the statutes is made almost mandatory by the provisions of the Federal acts.

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* Public Law 88-210, Part A, Section 8(1).

Many states do have a considerable number of statutes related to vocational education. In general, their difference is the inherent difference among states as to what is enacted as a statute and what is provided as policy by state boards.

In a number of states, the opinions of attorneys general were necessary to clarify the intent of previous vocational education legislation so that any new Federal legislation and aid would be accepted and recognized legally by the states.

It does not appear that the state constitution or the statutory law in the states hinders the administration or operation of vocational education services. If, however, the question was asked, "could constitutional or statutory laws be enacted which would improve vocational education?", the answer would be difficult to find. A constitutional provision or a legislative enactment could give more status, provide a mandated motivation and give immediate solutions to existing problems in some states. For example, in some states new legislative action in regard to vocational education for adults and out-of-school youth would supersede or eliminate other legislation which presently restricts the use of public funds for these purposes. Yet it is difficult to suggest specific legislative action in this study. Obviously there are effective methods of solving problems relating to the administration and operation of vocational education within a state.

In general, the weaknesses in vocational education are centered in (1) financial limitations, (2) lack of concern and/or knowledge of the importance and value of vocational education by persons in strategic positions in state government, (3) the "image" of vocational education in the minds of educators and parents and (4) the common human frailities of inefficiency or ineffectiveness. All except item (1) are probably impossible to correct by legal mandate, and the provision of additional finances does not necessarily require a statute, but merely an appropriation.

Selection of State Officers for the Administration of Vocational-Technical Education

There are 50 chief state school officers. Twenty three are elected by the people of the state, 22 of them are appointed by the State Board of Education and five are appointed by the governor of the state. Forty-five of the chief state school officers are executive officers of the State Board for Vocational Education of their state and thus become the highest administrative officials in the state vocational education system. Titles of the chief state school officers may be cataloged as follows:

State Superintendent of Public Instruction	27 states
State Commissioner of Education	16 states
State Superintendent of Schools	4 states
State Superintendent of Education	3 states

There are also 50 state directors of vocational education. In five states, the director is appointed by the State Board for Vocational Education and is the executive officer of the board. In 45 states, he is appointed by the chief state school officer.

All states use the title of State Director of Vocational Education at times for the professional staff member with the major responsibility for vocational education, but the title varies more widely than does the title for the chief state school officer.

The titles may be listed as follows:

State Director of Vocational Education (exclusively)	28 states
State Director of Vocational-Technical Education	2 states
State Director of Vocational-Technical and Adult Education	1 state
State Director of Vocational Public High School and Adult Education	1 state
State Director of Vocational and Adult Education	1 state
Chief, Vocational-Technical Education	1 state
Chairman and Director of Vocational Education	1 state
Administrator, Vocational and Technical Education	1 state
Executive Director of Vocational Education	1 state

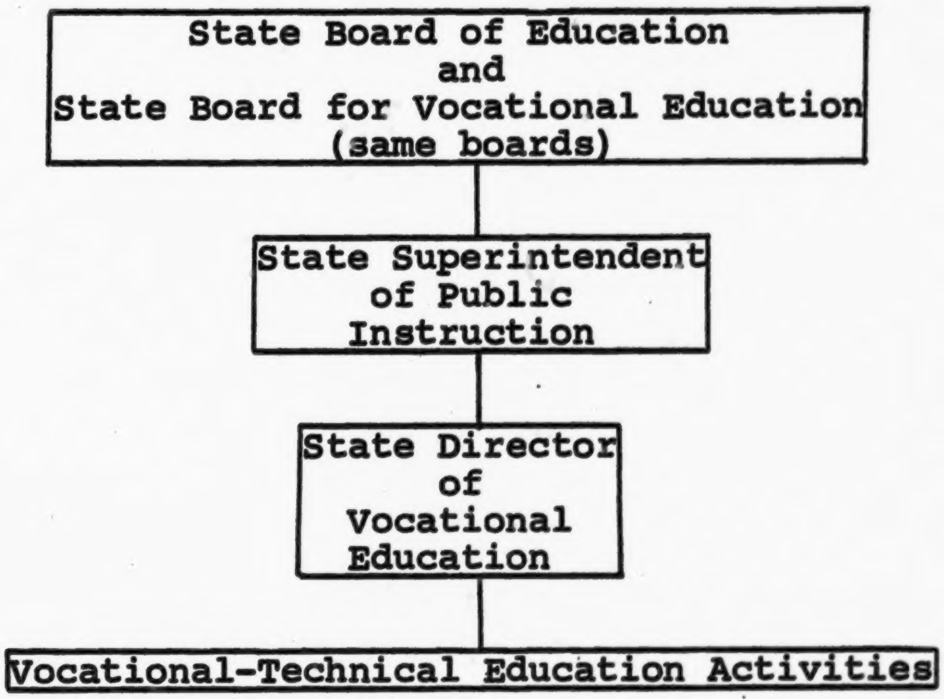
Program Administrator of Vocational and Technical Education	1 state
Chief, Bureau of Vocational Education	1 state
Director, Bureau of Vocational, Technical and Continuing Education	1 state
Assistant Superintendent for Vocational Education	4 states
Assistant Superintendent for Vocational, Technical and Adult Education	1 state
Assistant Superintendent for Vocational-Technical Education and Extended Services	1 state
Assistant Commissioner for Vocational Education	4 states
Assistant Commissioner for Occupational Education	1 state
Associate Commissioner for Vocational-Technical Education	1 state
Associate Commissioner for Vocational and Adult Services	1 state

It would appear difficult to think of a combination of terms which would create a new title. The "assistant" or "associate" title usually indicates a higher status in the authority hierarchy than the other titles. In five states, the state director reports directly to the State Board for Vocational Education (which usually is the same as the State Board of Education); in 35 states, he reports directly to the chief state school officer; and in 10 states he reports through one, and in some cases two other persons before his information or opinions reach the state superintendent or the state board.

The Position of Vocational-Technical Education in the State Administration of Education

The most common pattern of organization for the state administration of vocational education is illustrated by Diagram 1 below.

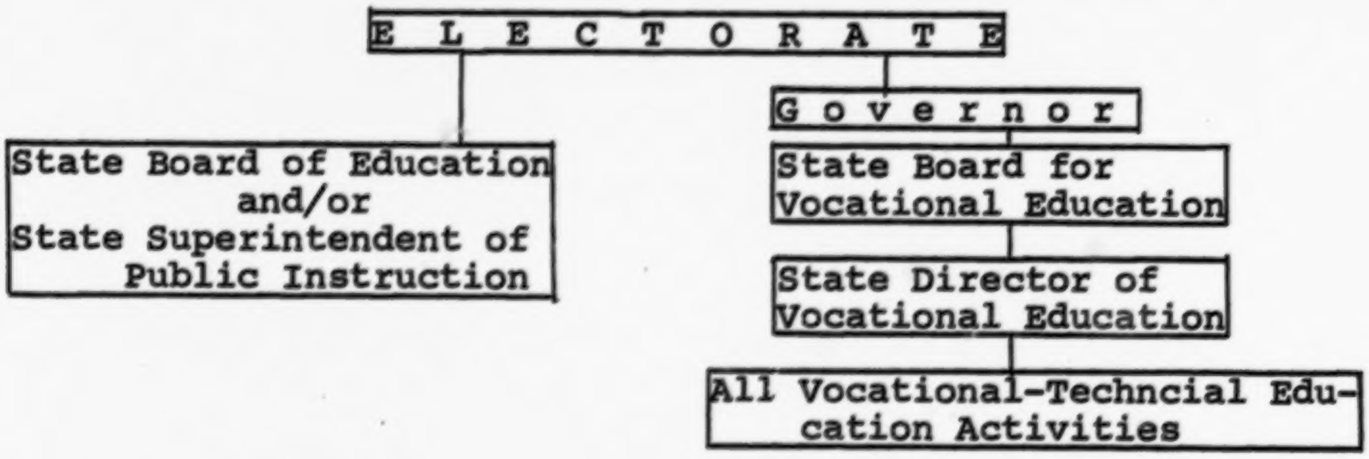
Diagram 1. Most Common Pattern of State Organization for the Administration of Vocational-Technical Education, (Typical for 45 States)


State Board of Education and State Board for Vocational Education (same boards)
State Superintendent of Public Instruction
State Director of Vocational Education
Vocational-Technical Education Activities

As described earlier, many different titles are used for the several professional positions shown on this diagram, and a number of methods are employed in appointing persons to these positions, but the essential personnel, relationships and activities are quite similar. This organization of administration is actually in operation in the 45 states for which it is a pattern. Because it operates in 90% of the states, it would be difficult to prove that this pattern or organization is not effective. However, it would be even more difficult to prove that it is the most effective pattern.

Another pattern is found in three states. This pattern is illustrated in Diagram 2.

Diagram 2. Pattern of State Organization for the Administration of Vocational-Technical Education. (Typical of 3 States)


ELECTORATE
Governor
State Board of Education and/or State Superintendent of Public Instruction
State Board for Vocational Education
State Director of Vocational Education
All Vocational-Techncial Education Activities

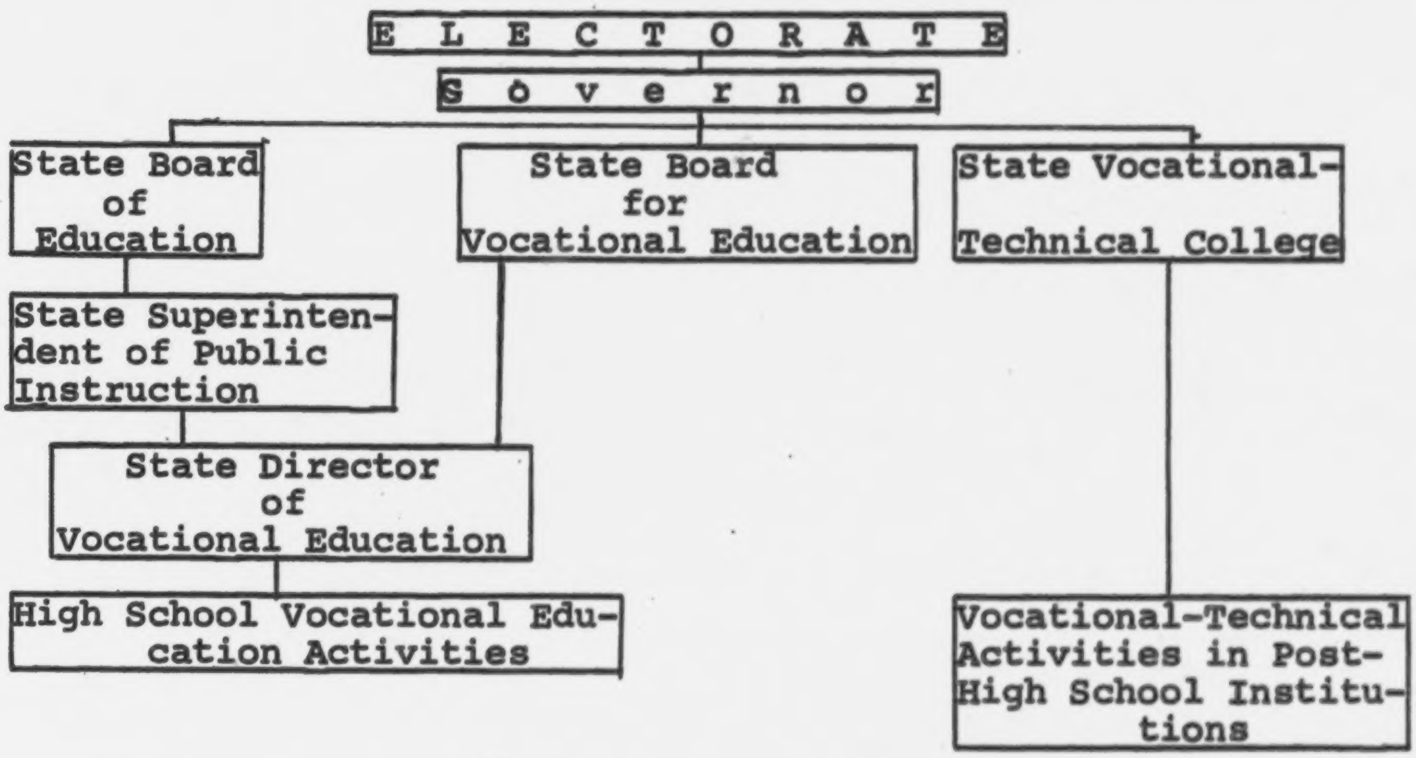
In this pattern of organization, the vocational education activities are under a single administrator and a separate policy-making board. The administrator and this board, however, are not under the direction of either the administrative authority of the secondary schools or the post-secondary institutions. Some of the inherent articulation problems may be prevented by having some interlocking members on the different boards.

A difference in this pattern is found in one state. In this variation, the organization remains the same, but high school vocational education activities are separated from post-secondary and adult education activities even though the State Board for Vocational Education is the sole legal agency for administering all vocational education programs in that state. The State Board for Vocational Education contracts with the State Board of Education for the operation under the State Superintendent of Public Instruction, of vocational education programs in secondary schools. But, the post-secondary and adult education activities remain the immediate responsibility of the State Board of Vocational Education and its executive officer.

Diagram 3 (on the following page) shows an organizational pattern which is unique and cannot be considered a variant of either of the first two patterns.

The pattern seen in Diagram 3 divides the responsibilities for vocational education between high school and post-high school levels. It also divides the responsibility for the activities of the state director between two authorities. Either of these divisions of authority and activities might lessen efficiency and at times cause severe problems.

Diagram 3. **A Unique Organization for the Administration of Vocational and Technical Education. (Unique to one State)**


ELECTORATE
Governor
State Board of Education
State Board for Vocational Education
State Vocational-Technical College
State Superintendent of Public Instruction
State Director of Vocational Education
High School Vocational Education Activities
Vocational-Technical Activities in Post-High School Institutions

This division of responsibility for vocational education between high schools and post-secondary institutions appears in five of the states using the pattern of Diagram 1.

It may be significant to note that only one state (Wisconsin) has a completely dual system at state and local levels and that this state enjoys the reputation of having one of the best vocational education programs in the nation.

Organization for the Administration of Vocational-Technical Education

The organizational structure within the divisions of vocational education in most states consists primarily of specialists in traditional occupational categories.

Six states have organizations largely unrelated to the traditional occupational categories. Many states have provisions for some new types of services. A number of others are in the process of major reorganization toward creating such services. Innovations are beginning to appear in the state organization, but these are too new at present for any one to determine a trend or make an evaluation.

The state division often has some activities which do not conform to the definition of vocational education or its ancillary services. The most common services of this type are industrial arts and homemaking. The newer activities are usually research, health services, work-study and/or guidance.

Professional Staff for State Administration of Vocational-Technical Education

The professional staffs of the state divisions for the administration of vocational education differ considerably in size. The following tabulation summarizes this information.

Number of Professional Staff Range	Number of States
0 - 9	3
10 - 19	14
20 - 29	11
30 - 39	7
40 - 49	5
50 - 59	6
Above 60	4

Smallest Staff	6
Median Staff	25
Largest Staff	89

The titles for the various professional staff vary considerably as do the assignments or activities performed under the same title. The staff titles are related to the variation in titles used in administration, supervision and management throughout the country. The practices are interrelated within the general boundaries of a state or a region rather than being uniform educational usage. The variation in activities performed under a single title is ususally related to type of organization, unique competencies of personnel or unique operating characteristics of the immediately responsible superior.

It is interesting to compare the size of the state divisions' staffs to the number of teachers in vocational education within the state. The range of this ratio is from a low of 1 to 240 to a high of 1 to 9. The median ratio is 1 to 52. These ratios can be summarized as follows:

Ratio of Vocational Teachers to State Vocational Division Professional Staff

Ratio Range	Number of States
0 to 1:9	1
1:10 to 1:19	3
1:20 to 1:29	7
1:30 to 1:39	5
1:40 to 1:49	6
1:50 to 1:59	9
1:60 to 1:69	4
1:70 to 1:79	3
1:80 to 1:89	1
1:90 to 1:99	2
1:100 to 1:199	7
Over 1:200	2

It is very difficult to determine a basic reason for this wide variation. A major contributing factor is that states with small enrollments must maintain certain basic services which may result in a relatively large ratio. This is indicated by the fact that of the ten states with the highest ratios, eight had vocational enrollments of fewer than 21,000 (less than 20% of the average vocational enrollment per state). Of the ten states with the lowest ratios, one has a very large enrollment, four had large enrollments and four were below the national mean state enrollment. (One of these states has the mean state enrollment.)

Obviously, the ratio is determined to a great extent by the philosophy of the state agency as reflected in the practices and supervisory services made available to local and institutional programs in and by a given state staff. A further in-depth study of these differences would be invaluable in evaluating the leadership and program development in each state and as compared with that of other states.

Schools Providing Vocational-Technical Education Programs

The total number of public schools and colleges offering vocational-technical education programs in the 50 states and Puerto Rico approximates 17,000 individual institutions. Although the greatest proportion of programs are found in regular or comprehensive high schools, 21 states reported the operation of area vocational schools.

The number of area vocational schools ranged from one such school in three states to 99 area vocational schools in one state. The total number of area vocational schools reported is 257. This is a rather impressive development inasmuch as Federal appropriations for area school construction are of recent origin.

The trend toward providing more vocational-technical education in post-secondary schools appears to be continuing. Forty-six states have reported a total of 741 post-secondary schools offering vocational-technical programs.

Income and Expenditures for Vocational-Technical Education

Total public expenditures for vocational-technical education for the year 1965-66 was almost $810,000,000. This figure represents approximately a 150% increase in such expenditures over 1962-63. Although Federal support for vocational-technical education programs has increased dramatically since 1962-63, both state and local sources of funds constitute the major contribution to this field of education. In 1965-66, local school district funds accounted for 44% of the total source of funds for vocational-technical education; 28% was contributed by state funds; and 29% was the share of the Federal government.

Expenditures for operation of the state division of vocational education vary from 2% to 10% of the total expenditures for vocational-technical education. Support for state agency administration appears to be equally shared by Federal and state sources of funds.

The largest part of the great increase in Federal aid for vocational education was used for the construction and operation of vocational-technical programs in schools.

Conclusions and Suggestions

In attempting to describe the organization and program activities of vocational education at the state level in all 50 states, there is the danger of oversimplification of a complex situation. Among the difficulties of such a study are lack of standard definitions among states, variation in the breadth of activities within a single state division of vocational education, and inconsistencies in reporting. A need for greater standardization in reporting has been found.

The new developing occupational clusters for which training is now being provided cannot be classified and reported according to traditional categories. Thus, there should be some modification of the present classification system.

This report covers only those vocational-technical education activities which conform to the definition of vocational education as given in the most recent Federal legislation (P.L. 88-210). A complete nationwide analysis of vocational-technical education in the United States would require total reporting of all funds and programs for vocational education. At present, such information is unavailable. Future research studies should be directed toward developing methods and techniques for securing complete and comprehensive data which would reveal the total extent of vocational-technical education in the United States.

On the basis of data collected to date, it would appear that in most states, vocational education is an integral part of the state's total public education program. In every state, providing vocational education is required by statute. Under Federal law each state must have a public board for vocational education which is empowered to contract for Federal funds for vocational education. In most states the State Board of Education is designated the State Board for Vocational Education, constituting further evidence of the integration of vocational education into the state's public education system.

In 45 states, the chief state school officer is the executive officer of the State Board for Vocational Education, and in most states the Director of Vocational Education reports directly to the chief state school officer. There appears to be a trend toward higher status of the Director of Vocational Education in the administrative hierarchy.

There is great variation among the 50 states in the number of professional staff members in the state agency for vocational education in relation to the number of vocational education teachers in the state. Although it is difficult to determine a basic reason for these differences, a major contributing factor appears to be size of enrollments in vocational education programs. States with small enrollments still must maintain certain basic services which tend to result in relatively high ratios.

Further in-depth study of the differences in these ratios among the states would be invaluable in assessing the influence of state agency philosophy on the size of the ratio, as obviously the ratio determines to a great extent the practices and supervisory services made available to local and institutional programs in and by a given state staff. Such a study would be helpful in evaluating the leadership and program development in each state as compared with that of other states.

Dramatic changes in administration, staffing and financing vocational-technical education took place between the years 1964-65 and 1965-66. To determine whether these changes are unique or whether they indicate a trend will require continued research and updating of data.

IV. STUDY OF PERCEPTIONS OF STATE-LEVEL ADMINISTRATION OF VOCATIONAL-TECHNICAL EDUCATION

A. Introduction

The purpose of this study was to secure the perceptions of persons with major responsibilities or sincere concern as to the effectiveness of vocational education services in the public schools of their state. This unit of the Project was conceived and planned primarily by Allen Lee.

In developing the research design, it was deemed appropriate to divide the study into two parts: the major study deriving its data solely from the Group Interview Guide; and a second study utilizing data secured primarily through individual interviews.

Charles Achilles assumed primary responsibility for the development of the Group Interview Guide and for implementation of the major study. Consultation concerning the statistical design and analysis was received from Robert Heath. Boyd Applegarth, E. E. Holt and Allen Lee conducted most of the data collection sessions--the administration of the Group Interview Guide. A. R. Bunger, J. R. Strobel, Charles Achilles, John Nasman and J. C. Swanson assisted in a number of sessions.

The analysis of data was under the direction of Charles Achilles with the assistance of Robert Heath and Phyllis Warren.

This unit of the Project required the largest commitment of staff and the greatest amount of time. The many states involved, the necessity of a "readiness" session before the major session and the detail analysis explains this major commitment of time and staff.

John Nasman developed the second study, and E. E. Holt with the assistance of several consultants designed the individual interview schedule. E. E. Holt, Boyd Applegarth, Joseph Strobel, A. R. Bunger and Byron Stetler conducted most of the interviews.

The analysis of the interview data was under the direction of Phillis Warren with the assistance of Mr. Nasman, Mr. Holt and Mr. Stetler.

B. Theoretic Framework and Background

The State agency for vocational technical education, often referred to as the State Division of Vocational Education (SDVE) was the focus of this study. An attempt was made both in terms of perceptions of what is, and of what should be, to study the SDVE role as expressed by representatives of local schools, area schools, higher education, the SDVE itself, the rest of the State Department of Education (SDE), and other agencies.

The activities of any organization depend partly upon the law, rules, regulations, and policies which are in effect. Role studies have shown that expectations are also influential factors affecting performance. Expectations stem from a variety of sources and may indicate a person's concept of an ideal, or of what should be. Perceptions, on the other hand, relate to a person's concept of the actual, or of what "is". An accurate conception of the role of the State agency for vocational and technical education (SDVE), as expected and as perceived by individuals and members of other agencies that interact with or are a client system for the SDVE, may well constitute a base for decision-making, and for the study of administrative aspects of vocational education.

One purpose of this study was to "take a look at" the SDVE in respect to its role in state-level administration of vocational-technical education. Since administration is thought of as a social process, an attempt was made to study the SDVE in situation, i.e., within the setting of its interactive process.

Complex societies designate organizations to perform necessary tasks or functions. Public education is a task left, generally, to the schools, and within the structure of education are organizations with specialized functions or roles. This study focused upon a generalized or institutional role, following the notions of Bennis, that "valid knowledge is... knowledge of an applied social science... that accepts the premise that groups and organizations as units are as amenable to empirical and analytical treatment as the individual" (3:140) and that "groups and organizations are taken as analytical and empirical units; they are not reducible." (3:142)

The investigation employed a general systems approach to the study of the SDVE. This approach was implemented by applying aspects of the role concept to the analysis of the operation of the SDVE. The SDVE was thought of as a subsystem within a larger system and as performing for that larger system a definable and patterned function or role which could be explained in terms of expectations held for it. The SDVE, as an organizational subsystem of a larger system, engages in activities related to goals which are components of the goals of the larger system. In engaging in these activities, the SDVE performs a function or role which may be generally described as state-level administration of vocational education. In performing this function, the SDVE comes into contact with a variety of people, representative of many subpublics in the state. Each of the groups with which the SDVE interacts has, or believes it has, a legitimate right to expect certain activities and functions from the SDVE.

The people with whom the SDVE interacts may or may not perceive the SDVE in the same or similar ways. In like manner, these people may hold differing perceptions of what the SDVE should be or should do.

Social changes are demanding that the SDVE maintain or develop strong dynamic leadership and viable relationships with the local school districts. Sweeping changes in our social and technological foundations may cause perceptions of what the SDVE should do to change rapidly. The SDVE, to perform its function most effectively, must be aware of the way other people view it, of perceptions and expectations held for it.

Research done within the concept of role and role analysis has provided growing awareness of the importance of role concept in education. In general, role studies have indicated that when the concerned differ in their perceptions of what a role is, or should be, conflicts and a decrease in effectiveness and efficiency may result. In a system as complex and diverse as American education, it is important that the role of the administrative or controlling agency be understood.

The literature on the State Department of Education (SDE) (and indirectly the SDVE) supports the notion that state-level educational administration is a combination leadership-regulatory function. On the one hand, basic social forces, coupled with a rapid expansion of education and education needs at all levels of society have created new challenges for education. Increased Federal interest in the problems of education, and new or increased Federal programs for education are adding to the need for strong state educational leadership, and to the need to study and understand the respective organization and role of each component in the educational system. On the other hand, the regulatory function still must be carried out. Particularly on the state level, there is need for control of funds and the improvement of and checking upon programs to meet predetermined standards.

This study viewed the SDVE both in terms of the traditional regulatory function and an emergent leadership-change function. One assumption implicit in the study was that changing times are demanding that more emphasis be placed upon the leadership function and less upon the regulatory. One dimension of the leadership function was thought to be the involvement--in the planning states and perhaps at the decision-making level--of pertinent groups, both of educators and of other persons. *

The role of the SDVE, which in the past may have been primarily compliance checking-inspection-regulation and secondarily change-leadership, may now need to emphasize, and be expected to emphasize, the change-leadership aspect and diminish the supervision-inspection-regulation aspect.

Since an analysis of the perceived (actual) and expected (ideal) role of the SDVE was one aspect of this study, some reliance was made upon research and concepts from role and role analysis. Questions such as "What is the role of the SDVE?", or, "What is the role of the Federal government in the support of education?", reflect a generalized or institutional role concept; whereas the role concept is most generally thought of as applied to the functioning of an individual acting within the framework of an organization. In this study the role concept was broadly applied to the functioning of an organizational subsystem within a larger system. Role has been variously defined. A sample of definitions from role literature might help clarify the concept of role.

> ...it is the participation of an actor in a patterned interactive relationship which is for many purposes the most significant unit of the social system. This participation in turn has two principal aspects...there is the processual aspect, that of what the actor does in his relations with others seen in the context of its functional significance for the social system. It is this which we shall call role. (26:25)

> Roles are institutionalized when they are fully congruous with the prevailing culture patterns and are organized around expectations of conformity with morally sanctioned patterns of value-orientation shared by the members of the collectivity in which the role functions. (27:23)

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* Appendix I outlines the concept of leadership-change.

> Roles thus represent ways of carrying out the functions for which positions exist--ways which are generally agreed upon within whatever group recognizes any particular position and role. (23:280)*
>
> A social role is commonly defined as a set of expectations oriented toward people who occupy a certain 'position' in a social system or group. (24:283)
>
> If the goals and purposes of the institution are know, the tasks to achieve the goals may be specified, and these may be organized into roles...Roles represent positions, offices, or statuses within the institution... Roles are institutional givens...The behaviors associated with a role may be thought of as lying along a continuum from required to prohibited...Roles are complementary. Roles are interdependent in that each role derives its meaning from other related roles in the institution. (12:425-427)

Extension of the basic systems model suggests that an organization can be analyzed as a subsystem of a larger system sharing in the larger system's value-orientation, and that concepts from role theory can be used in developing a framework for this analysis.

> ...the most essential feature of the value system of an organization is the evaluative legitimation of its place or "role" in the superordinate system. (25:67-68)

As mentioned previously in such a framework, each social system, at whatever level of generalization, is composed of some form of organization and role structure. Thus, the general concept of role can be applied to the functioning of an organization operating towards the attainment of a goal within a structured social system. An organization within a social system must have some function or role defined for it, and some general agreement among its members and its client groups in respect to what the organization is or does, or what it should be or should do. Diverse or conflicting perceptions can cause a poorly functioning organization.

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* Note that "generally agreed upon" does not define an absolute, but that it leaves room for degrees, or states of agreement. These varying degrees of agreement between and among people can be thought of as states of consensus.

This investigation was conducted as a field study based upon ex post facto research design, with the accompanying strengths and limitations as enumerated by Kerlinger (16:387, 389-391). For purposes of study, the SDVE was conceived of as a combination leadership-regulation agency (4, 5, 6, 7, 22, 31, 11). Leadership and regulation were not thought to be discrete role categories, but as located along a continuum. Involvement was thought to be one dimension of leadership. The study design was so developed that an emphasis upon leadership or regulation activities could be identified within the general framework. In this investigation, some aspects of the role concept were employed in the theoretical design.

Role theory has been used by social scientists for analysis of the functioning of social systems. In this study, a general systems approach implemented by applying aspects of the role concept was utilized. The SDVE was thought of as an organization operating as a component of a larger educational system. It could then be conceived of as a subsystem of a more comprehensive social system and as performing a function or role for the larger social system. Since administration is a social process and was studied as a situational factor in this investigation, it was helpful to reply upon a sociological model as a basis for this study. The SDVE, an organization established for the purpose of state-level administration of vocational education, has certain characteristics of an organization:

1. The SDVE can be located; its position and/or function can be defined by reference groups.

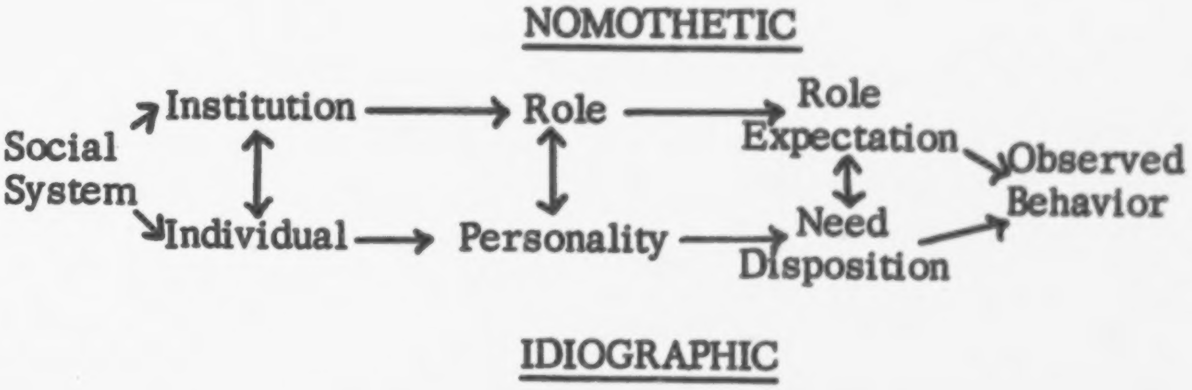
2. The SDVE is purposive. It has been established to meet and achieve goals.

3. The SDVE has been legitimated.

4. The SDVE is characterized by structural and functional hierarchial relationships.

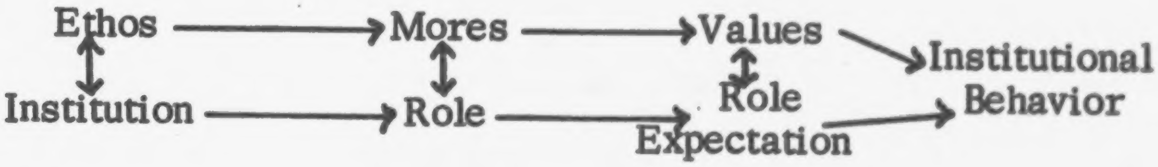
5. The SDVE is staffed and interactive. It is a social system and a part of a larger and more complex social system.

These ideas may be expressed within the framework of the construct presented by Guba and Getzels. (12:426)


NOMOTHETIC
Social System
Institution
Role
Role Expectation
Individual
Personality
Need Disposition
Observed Behavior
IDIOGRAPHIC

Talcott Parsons has suggested that an organization could be analyzed as a subsystem of a larger system.(26:67-68) Parson's formulations make distinctions between institution and collectivity (organization) and suggest that the role concept can be used to study the institution as well as the collectivity. Thus a collectivity is a social system, an institution is a social system, and a social system is constituted of interactive subsystems of institution and collectivity. In this structure each social system, at whatever level of generalization, is composed of some form of organization and role structure. (11 :39, 133)

An extension of the previously mentioned formulation, as reported by Getzels and Thelen (13:72), suggests that a total institution may be studied in terms of its generalized role within a more comprehensive system.


Ethos
Mores
Values
Institution
Role
Role Expectation
Institutional Behavior

Consensus, i.e., that members of an organization or social system hold the same perceptions of the actual and ideal role for the same position, cannot be assumed. Consensus may fall on a continuum from complete institutionalization to complete breakdown of order. (11:39)

> The institutionalization of a set of role expectations and of the corresponding sanctions is clearly a matter of degree ...The polar antithesis of full institutionalization is, however, anomie, the absence of structured complementarity of the interaction process or, what is the same thing, the complete breakdown of normative order in both senses.

Within this framework, the SDVE was seen as performing both a traditional regulatory function. The traditional regulatory function was thought to include such activities as (1) setting and maintaining minimum standards, (2) keeping records and making reports, (3) checking local district compliance with state regulations, (4) developing uniform statewide curricula and (5) inspecting local district facilities and programs.

The emergent SDVE leadership role was conceptualized as including activities related to (1) setting goals, (2) defining problems, (3) researching, (4) developing programs, (5) field testing, (6) dissemination, and (7) implementation. The involvement in these activities of at least four agencies: (1) State Department of Education, (2) local schools, (3) higher education, and (4) Federal government was seen as one dimension of the leadership-change function. This formulation is detailed in Appendix I.

C. Report of the Perceptions Study Based Upon the Group Interview Guide

1. The Group Interview Guide

The procedures for accomplishing this research can be divided into three main categories: (1) development of an instrument for data collection, (2) gathering of data, and (3) processing and analysis of the data.

The basic procedures in the development of an instrument for data collection are included in the Final Report for Project 5-8466.* The instrument resulting from this process consisted of seven sections and a personal data resume.

Drafts of the instrument were field-tested in a variety of situations: (1) in a large city, (2) in an educational administration class in a university, (3) in the SDVE of a western state, and (4) in two pilot states, (A and B) using the range of respondents seen as pertinent for this study.

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* "Identification and Development of Instruments for a Study of the Expectations and Perceptions of the State Vocational-Technical Education Agencies and Their Influence Upon Local Programs." USOE Project No. 5-8466, January, 1967.

Data from states A and B--N=45 and N=43 were tabulated and a frequency distribution was derived. An item analysis was done, based upon the distribution of responses of the three following respondent sub-groups.

Group I	Members of the SDVE (N=27)
Group II	Local, area, and higher education (N=31)
Group III	Other respondents (N=30)

Steps initiated under project 5-8466 were continued in the present project. After data had been collected in nineteen states, some revisions of the instrument were undertaken as a result of preliminary analysis and respondent verbal feedback. Changes and improvements were made on the group data instrument such that some of the original items were removed and new items were added. The wording of a few items was changed slightly for clarity. The result was that some items were common to both group data instruments, and some items were included only on one or the other group data instrument. *

2. Data Collection

A purposefully selected sample was used in this study. The sample was made up of educators from the various educational institutions and organizations within a state, and of persons from other organizations and agencies that interact with the SDVE or are related in some way to, or have an interest in, vocational education.

Respondents from thirty-eight states, or approximately seventy-six percent of the planned total of fifty states, made up the sample for this study. Since a state was in no way obliged to participate in the project, scheduling of data sessions was dependent upon the convenience of the states, and arrangements were handled only through the office of the project director. Scheduling was further complicated by individual commitments of the proposed respondents.

In two pilot states the project staff at Berkeley attempted to select respondents by name from state directories. Many "long distance" problems arose in (1) arranging a schedule to accommodate the respondents,

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* Data are reported in three ways: (1) items common to both group data instruments, (2) items included only on the first group instrument, and (3) items included only on the second group instrument. Separate analyses were done as appropriate.

(2) arranging last-minute alternates for those who could not attend, (3) finding replacements for those who had left the position for which they were listed in the directory, and (4) checking last-minute details. It became apparent that respondent selection had to be handled at the state level. Categories of proposed respondents had been developed in the earlier stages of the project. This list of categories, suggestions for selecting the respondents, and the proposed number of respondents in each category were sent to the state. The state staff was requested to select the necessary respondents using the respondent categories as guidelines.

By leaving actual respondent selection to each state, except where the incumbent of a specific position was requested, there was danger that only "friends" of vocational education would be selected. There was no control of this variable other than a request in the letter of instruction that the state try not to "stack the cards". The problems mentioned above made other methods of selection impractical.

3. Processing and Analysis of Group Interview Data

Preliminary Data Processing Steps*

Each respondent was identified by a two digit state number and four digit number corresponding to the number on the Group Interview Guide that he completed. In addition, respondents were classified according to a predetermined respondent category list. Three points of reference were used for this classification: (1) a respondent's own description of his job and employer, (2) the State Education Directory, and (3) the letter of invitation designating proposed respondent categories. After coding, raw data from the group instrument were converted to machine-usable form. Data were then checked for conversion accuracy and were loaded to magnetic tape for ease of storage, retrieval, and use.

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* Much of the data processing work for this project was performed through an arrangement with the Survey Research Center (SRC) at the University of California, Berkeley. Among SRC services were: (1) conversion of data to machine-usable form, (2) establishment and maintenance of the data bank, and (3) programming, computer, and consultant services as needed. Computer processing, unless otherwise noted, was performed on an IBM 1620, Model II. Some data processing and analysis made use also of an IBM 7040 located at the Computer Center of the University of California, Berkeley.

Groups and Items for Analysis

There were many possible logical ways to divide the total number of respondents into subgroups for data analysis. A major limitation on the number of subgroup divisions was the number of respondents in each subgroup. At the outset of this study, a respondent category list was developed. The sample requested in each state was based upon this list. Ideally, there would have been enough respondent cases in each category to allow comparisons to be made with each group. Practically, it was noted that some combining of categories would probably be necessary. Some combined groups were used as crossbreaks for data analysis purposes. These groups made up from the combined respondent categories were then used as corssbreaks for data analysis. These groups easily produced many more possible combinations of data analysis crossbreaks than were used. Since the focus of this study was the SDVE, the SDVE group was used as one crossbreak variable in most of the analyses. Besides comparisons based upon respondent category as related to the sample, there were other kinds of comparisons which were hypothesized to be important, but which, for one reason or another, were not made. Some of these crossbreaks could be determined from the respondent information available from the personal data summary, others from geographic, demographic, or state organization characteristics.

Not all items from the instrument were individually used in the analysis reported here, although response frequencies for all items are reported to the appendix. Some items were used only as they contributed to the composition of a cluster.

Item Cluster Development

A priori item clusters which could be scored and treated as units were designated and tested. Items were first classified into three broad categories: (1) leadership-change, (2) inspection-regulation, and (3) involvement. From the broad categories, seven item clusters conforming to major areas of concern in this study were designated *a priori*.

1. Present degree of SDVE leadership function.
2. Ideal degree of SDVE leadership function.
3. Present degree of SDVE regulation function.

4. Ideal degree of SDVE regulation function.
5. Attitude toward vocational-technical education.
6. Present degree of SDVE involvement function.
7. Ideal degree of SDVE involvement function.

Using data from five states for pilot work (N=226), a trial scoring key for each cluster was designated and a total score for each respondent on each cluster was found. A frequency distribution of scores in each cluster was generated. The median interval was determined and the cluster was dichotomized. Chi-square contingency tables were generated for each item as shown in Table 1 on the following page.* Analysis on the trail scoring key, cluster index and contingency tables for cluster 6 indicated many (up to 40% on some items) "don't know" responses. The index for this cluster was rebuilt omitting "don't know" responses. Items were dichotomized on the basis of the new index.+

Since items were assigned a priori, each item was tested not only with its a priori cluster score, but also against other cluster scores to detect statistical indications that (1) the number of clusters could be reduced, and (2) an item difficulty index and a discrimination index in the form of a chi-square with three or four degrees of freedom, depending upon the item.

On the basis of pilot analyses, item clusters were revised and the item scoring key was corrected for dichotomous scoring.

Some revision in the Group Interview Guide made a reformulation of clusters and a corresponding recomputation of reliability coefficients and correlations necessary. In each case, the dual computations are indicated by the number of respondents (N=905, N=878) for each group of data.

A procedure slightly different from the original was used to develop the item clusters for the second batch of data. Since most of the items for

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* Response category "uncertain" was treated as no response. The clusters were derived using percentages based upon the number of respondents minus the number of respondents marking "uncertain" and not responding.

+ This index was also used in developing a "does" score and a "should" score for each respondent on section IV of the data instrument.

TABLE I

CHI-SQUARE CONTINGENCY TABLE FOR ITEM CLUSTER DEVELOPMENT: SECTION I, ITEM 1 (N = 226)

Response Choice	Cluster 1			Cluster 2			Cluster 3			Cluster 4		
	High	Low	Σ	High	Low	Σ	High	Low	Σ	High	Low	Σ
1	3	0	3	2	1	3	2	1	3	3	0	3
2	23	17	40	21	19	40	18	22	40	25	15	40
3	11	9	20	6	14	20	7	13	20	5	15	20
4	58	69	127	59	68	127	66	61	127	62	65	127
5	16	20	36	18	18	36	13	23	36	16	20	36
No Answer	0	0	0	0	0	0	0	0	0	0	0	0
Total (Σ)	111	115	226	106	120	226	106	120	226	111	115	226
X^2	5.33	DF = 4		3.38	DF = 4		4.52	D.F. = 4		10.77	DF = 4	
Response Choice	Cluster 5			Cluster 6			Cluster 7			X^2 Significance for four degrees of freedom:		
	High	Low	Σ	High	Low	Σ	High	Low	Σ			
1	3	0	3	3	0	3	3	0	3			
2	28	12	40	21	19	40	17	23	40			
3	8	12	20	10	10	20	8	12	20	9.488 = .05		
4	67	60	127	64	63	127	64	63	127	13.277 = .01		
5	9	27	36	14	22	36	19	17	36	18.465 = .001		
No Answer	0	0	0	0	0	0	0	0	0			
Total (Σ)	115	111	226	112	114	226	111	115	226			
X^2	19.37	DF = 4		4.97	DF = 4		4.68	DF = 4				

the original clusters were also present for the revised clusters, the trial scoring key was developed from the items which had already been selected for the original clusters and which were retained on the new instrument. Responses to these items were dichotomized, and responses to new items were tested in relation to the new indices with a chi-square test. From the comparison of the chi-square results and the a priori assumptions for each item, the new items were dichotomously scored and assigned to the appropriate clusters. The new clusters were then used in analysis of responses of the second group of respondents. (N=878)

Missing Data in Item Cluster Scores

The possibility of missing data was inherent in the data collection instrument (e.g. respondents could elect not to respond to any item; in section I they could choose "uncertain" and in sections V, VI, and VII, they could choose "don't know"). Such responses were treated as missing data in an item cluster, but were retained in single item analysis. To accommodate these contingencies in dichotomous scoring, each respondent's cluster score was derived as a proportion of his responses by omitting any response classified as missing data.[*] This procedure, while not entirely satisfactory, was preferred to treating "no response", or "uncertain" and "don't know" choices as either 1 or 0 in dichotomous scoring.

Cluster Difference Scores[+]

Cluster difference scores between similar clusters were obtained by subtracting (for item stems common to each cluster, but different in terms of the "does'should" dimensions) the respondent's "does" score from his "should" score on each item. These differences were totaled. A constant, 1, was added to each total to circumvent negative numbers.

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[*] i.e., $\frac{\sum 1}{\sum (1+0)}$

[+] Items in the basic clusters were individually dichotomized and scored so as to maximize item discrimination and cluster reliability. For the cluster difference scores, the same item had to be similarly dichotomized for both the "does" and "should" dimensions. This necessitated a rescoring of each item and some compromise with maximum dichotomization. Mean standard deviations and reliability coefficients for the common item clusters are presented in Appendix IV, H and I. Common item cluster means and standard deviations were used in obtaining the reliability coefficients of the cluster difference scores.

Group Interview Guide Section IV Scores

Both a "does" and "should" score on section IV of the group instrument, as well as a "does-should" difference score for section IV was generated for each respondent. These scores were treated in the same manner as other cluster scores.

Cluster Reliability

The reliability of each basic cluster and the section IV scores (clusters) was estimated by the Kuder-Richardson Formula 20.[*]

Corrections for missing data in the dichotomous scoring were made in the following manner. The mean and standard deviation of each cluster were multiplied by the number of items in that cluster, since the mean for each cluster was a proportion: $\sum \left[\frac{\sum 1}{\frac{\sum (1+0)}{N}} \right]$[+]. The reliability coefficients are presented in Table 2.[‡]

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[*] This formula is: $r_{tt} = \frac{k}{k-1} \; 1 - \frac{pg}{s^2}$.

[+] Multiplication of the mean and standard deviation by a constant does not influence their relative values.

[‡] Reliability (r) or difference scores (i.e., clusters 10c, 11c, 12, and 13c was computed by the formula:

$$R_{diff} = \frac{\frac{r_{11} + r_{22} - r_{12}}{2}}{1 - r_{12}} .$$

Robert L. Thorndike and Elizabeth Hagen, Measurement and Evaluation, (second edition; New York; John Wiley & Sons, Inc., 1962), p. 192.

TABLE 2

RELIABILITY COEFFICIENTS FOR CLUSTER SCORES
SECTION IV SCORES AND CLUSTER DIFFERENCE SCORES

Cluster	Designation	Reliability (N=905)	Reliability (N=878)
1	Actual Leadership	.93	.87
2	Ideal Leadership	.90	.87
3	Actual Regulation	.86	.86
4	Ideal Regulation	.75	.69
5	Attitude towards Vocational-Technical Education	.57	.59
6	Actual Involvement	.94	.95
7	Ideal Involvement	.89	.87
8	Section IV, Should	.91	.90
9	Section IV, Does	.94	.95
10C	Leadership Difference: Common Items (clusters 2 - 1)	.86	.85
11C	Regulation Difference: Common Items (clusters 4 - 3)	.66	.69
12C	Involvement Difference: Common Items (clusters 7 - 6)	.84	.80
13C	Section IV Difference: Common Items (clusters 8 - 9)	.81	.84

Both item cluster scores and individual items were used in the data analysis. Chi-square tests were used for single items; analysis of variance techniques were used when data were scored. Correlations between and among the clusters were developed from responses to items in the clusters. Some simple arithmetic computations were made, such as totalling responses or obtaining averages, and data were ranked or grouped to facilitate analysis.

Chi-Square Tests

The non-parametric chi-square test for independent samples was used to test for significance of differences in respondent group response frequencies on single items. The chi-square test was also used to test for significance of differences in a single group's responses to the "does" and the "should" dimension of the same item stem.

Analyses of Variance

Analyses of variance were used to test for significance of differences among respondent groups in their responses to the item clusters. Analysis ofvariance techniques were also used to substantiate the a priori grouping of three respondent subgroups into one larger respondent group.

Correlational Techniques

Thirteen-by-thirteen Pearson product-moment correlation matrices were developed for the respondent scores obtained from the clusters. A separate matrix was generated for each one of these groups of respondents (N=905 and N=878).

Ranking and Grouping

Respondent means and standard deviations, as well as consensus on single items, were grouped and ranked to aid in interpretation of results and discussion of the relationships between and among respondent groups, item, and item clusters. Consensus was taken to be that sum of percent of responses in two contiguous categories (excluding "uncertain", "don't know", or no response) which produced the highest total percent. For classification purposes, the following categories of consensus were defined:

100-90%	High Consensus
89-80%	High-Medium Consensus
79-70%	Medium Consensus
69-60%	Low Consensus
Less than 60%	Lack of Consensus

4. Results of Investigation

Extremely long or detailed results are contained in the appropriate appendix and summary tables are shown here. Occasionally, for parsimony in reporting, two results are contained on one table. Whenever this occurs, a discussion of both results will be contained in the discussion section and the title of the table will make reference to both kinds of results.

Results are presented in this section in the following sequence:

a. Results of chi-square tests for differences in group response frequencies for items from the Group Interview Guide. This table also indicates which items were chosen for each item cluster.

b. Means and standard deviations of respondent groups for cluster scores.

c. Summary of analyses of variance tests on cluster scores, including groups used for analysis and significance of results.

d. Correlation matrix for item cluster scores, Section IV scores and common item cluster difference scores.

e. Results of chi-square tests for differences in Group "does" and "should" response frequencies for the same item for Section II and VII of the Group Interview Guide.

f. Mean cluster scores of selected respondent groups (plotted as bar graphs).

g. Relationship of actual and ideal involvement of selected respondent groups in SDVE activities (plotted as bar graphs). Actual percents appear as Appendix II, E.

h. Relationships of selected respondent group mean scores on two item clusters (represented as scatter plots).

i. Results pertaining to identification and analysis of bridges and obstacles.

A. RESULTS OF CHI-SQUARE TESTS FOR DIFFERENCES IN GROUP RESPONSE FREQUENCIES FOR ITEMS FROM THE GROUP INTERVIEW GUIDE

The following tables list section, item, degrees of freedom, computed chi-square value, significance (.05 or .01), and an indication of the kind of item (where applicable). This classification of items is based upon the selection of items for the item clusters.

Abbreviations:

Roman numerals indicate sections of the Group Interview Guide
Arabic numerals indicate items from the Group Interview Guide
(A) indicates an item included on the addendum to the Group Interview Guide
D indicates a "Does" item
S indicates a "Should" item
L indicates an item selected for a leadership cluster
R indicates an item selected for a regulation cluster
I indicates an item selected for an involvement cluster
A indicates an item selected for an attitude cluster
Lower case letters (a, b, c,) indicate subsections of items
* = significant at the .05 level of significance
** = significant at the .01 level of significance

Respondent Groups used in analyses: State Division of Vocational Education (SDVE), State Department of Education (excluding SDVE), local schools, area schools, higher education , combination of: State Board of Education, legislators and state-level advisory committee members, and others.

Section and Item	DF	X^2	Kind of Item	Section and Item	DF	X^2	Kind of Item
I, 1	24	53.38**	A	I,38	24	43.21**	AL
2	24	44.49**		39	24	33.96	
3	24	74.03**		40a	24	68.97**	AL
4	24	72.29**		40b	24	52.97**	
5	24	56.22**		40c	24	33.94	
6	24	113.28**	R	40d	24	35.84	
7	24	38.78*	R	41	24	64.15**	
8	24	54.85**	A	42	24	38.13*	L
9	24	85.66**		43	24	38.76*	
10	24	95.89**	A	44	24	96.98**	AL
11	24	68.80**	A	45	24	60.18**	
12	24	67.08**		46	24	54.18**	
13	24	90.65**	A	47	24	49.27**	
14	24	193.55**	A	48	24	45.42**	
15	24	97.46**		49	N/A	N/A	
16	24	77.67**		50	12	27.33**	
17	24	99.34**		51	N/A	N/A	
18	24	41.55*	A	52	N/A	N/A	
19	24	109.50**	A	53D	6	27.11**	R
20	24	35.04		53S	6	9.17	R
21	24	76.24**		54D	6	30.56**	R
22	24	46.82**		54S	6	31.58**	R
23	24	35.99	A				
24	24	46.67**		II, 1D	24	106.43**	L
25	24	116.01**		S	24	56.06**	L
26	24	47.01**		2D	24	49.11**	L
27	24	36.46*		S	24	47.99**	L
28	24	93.69**	A	3D	24	74.30**	L
29	24	32.12	AL	S	24	44.88**	L
30	24	177.16**		4D	24	80.22**	L
31	24	53.13**	AL	S	24	33.91	L
32	24	44.88**		5D	24	39.49*	R
33	24	84.12**	A	S	24	33.82	R
34	24	31.17	A	6D	24	135.59**	L
35	24	73.30**		S	24	67.71**	L
36	24	114.61**	A	7D	24	65.58**	L
37	24	31.98	A	S	24	38.68*	L

* Significant at .05 ** Significant at .01

Section and Item	DF	X^2	Kind of Item
8D	24	62.74**	L
S	24	68.33**	L
9D	24	48.25**	L
S	24	33.56	L
10D	24	87.28**	R
S	24	101.87**	R
11D	24	20.20	R
S	24	31.26	R
12D	24	37.99*	L
S	24	32.63	L
13D	24	54.43**	L
S	24	28.07	L
14D	24	35.74	R
S	24	51.81**	R
15D	24	48.75**	R
S	24	63.92**	R
16D	24	25.77	R
S	24	35.13	R
17D	24	50.37**	L
S	24	36.50*	L
18D	24	83.91**	L
S	24	55.28**	L
19D	24	57.97**	L
S	24	40.73*	L
20D	24	79.48**	L
S	24	49.20**	L
21D	24	63.43**	L
S	24	31.37	L
22D	24	31.30	L
S	24	42.50*	L
23D	24	56.82**	L
S	24	30.78	L
24D	24	44.49**	R
S	24	37.12*	R
25D	24	43.85**	L
S	24	18.67	L
26D	24	45.37**	L
S	24	51.85**	L
III, 1	18	17.03	
2	18	31.35*	
3	18	38.69**	L
4	24	48.73**	L
5	12	30.31**	L
6	12	26.59**	L
7	12	27.41**	
8	18	30.41*	L
9	24	70.82**	
10	24	47.17**	R
11	18	31.98*	
12	24	38.41*	R
13	12	54.19**	L
14	18	46.73**	L
15	24	45.32**	R
16	18	29.22*	L
17	18	42.42**	L
IV, 1D	24	320.90**	I
S	24	254.96**	I
2D	24	278.11**	I
S	24	189.69**	I
3D	24	305.13**	I
S	24	295.20**	I
4D	24	264.35**	I
S	24	205.51**	I
5D	24	247.15**	I
S	24	215.13**	I
6D	24	336.88**	
S	24	313.32**	
7D	24	305.14**	I
S	24	232.87**	I
8D	24	291.26**	I
S	24	219.57**	I
9D	24	171.43**	I
S	24	180.92**	I
10D	24	318.12**	I
S	24	217.51**	I

* Significant at .05

** Significant at .01

Section and Item	DF	X^2	Kind of Item	Section and Item	DF	X^2	Kind of Item
IV, 11D	24	246.15**	I	V, 15D			
S	24	187.39**	I	S			
12D	24	251.74**	I	16D	24	165.70**	I
S	24	258.42**		S	24	29.59	I
13D	24	269.04**	I	17D	24	58.31**	
S	24	213.49**	I	S	24	27.91	
14D	24	84.49**					
S	24	107.19**		VI, 1D	24	196.85**	I
				S	24	64.40**	I
V, 1D	24	212.10**	I	2D	24	233.19**	I
S	24	50.23**	I	S	24	58.84**	I
2D	24	262.57**		3D	24	133.74**	
S	24	46.92**	I	S	24	35.63	I
3D	24	154.69**		4D	24	144.15**	
S	24	32.37	I	S	24	29.73	I
4D	24	155.44**		5D	24	126.20**	
S	24	40.55*	I	S	24	34.62	I
5D	24	144.49**		6D	24	117.28**	
S	24	31.94	I	S	24	23.31	I
6D	24	112.84**		7D	24	132.58**	I
S	24	47.67**	I	S	24	18.62	I
7D	24	134.82**		8D	24	220.61**	
S	24	30.95	I	S	24	44.45**	I
8D	24	220.25**		9D	24	141.00**	
S	24	63.81**	I	S	24	42.97*	I
9D	24	165.21**		10D	24	197.82**	I
S	24	42.29*	I	S	24	47.71**	I
10D	24	283.22**	I	11D	24	247.61**	I
S	24	55.46**	I	S	24	84.95**	I
11D	24	275.04**	I	12D	24	166.67**	I
S	24	62.77**	I	S	24	58.32**	I
12D	24	187.75**	I	13D	24	146.67**	I
S	24	31.40	I	S	24	37.99*	I
13D	24	152.07**	I	14D	24	167.97**	I
S	24	44.47**	I	S	24	100.92**	
14D	24	223.15**		15D	24	88.53**	
S	24	103.95**	I	S	24	20.46	

* Significant at .05 ** Significant at .01

Section and Item	DF	x^2	Kind of Item
VI, 16D	24	164.69**	I
S	24	44.57**	I
17D	24	34.35	
S	24	24.68	
VII, 1D	24	220.25**	L
S	24	33.49	L
2D	24	176.36**	L
S	24	29.40	L
3D	24	223.50**	L
S	24	51.59**	L
4D	24	255.94**	L
S	24	41.42*	L
5D	24	222.10**	L
S	24	34.58	L
6D	24	200.46**	L
S	24	43.06**	L
7D	24	173.44**	LI
S	24	40.95*	L
8D	24	246.69**	R
S	24	56.32**	R
9D	24	455.15**	R
S	24	130.23**	R
10D	24	304.69**	R
S	24	60.33**	R
11D	24	253.84**	R
S	24	45.91**	R
12D	24	309.35**	RI
S	24	52.09**	R
I, 1(A)	24	99.32**	A
2(A)	24	86.47**	A
3(A)	24	47.11**	
4(A)	24	64.36**	A
5(A)	24	73.10**	
6(A)	24	90.75**	A
7(A)	24	76.29**	
I, 8(A)	24	89.22**	A
II, 9(A)D	24	68.46**	L
S	24	36.33	L
10(A)D	24	61.98**	L
S	18	36.12**	L
11(A)D	24	29.44	R
S	24	30.33	R
12(A)D	24	59.79**	L
S	18	18.62	L
13(A)D	24	40.00	L
S	18	24.67	LI
14(A)D	24	33.66	R
S	24	33.94	R
III, 15(A)	18	32.86*	L
16(A)	18	34.41*	L
V, 17(A)D	24	78.32**	I
S	24	21.65	I
18(A)D	24	88.60**	I
S	24	36.49*	I
19(A)D	24	74.16**	
S	24	26.35	I
VI, 20(A)D	24	88.12**	
S	24	22.76	I
21(A)D	24	104.19**	
S	24	31.12	I
22(A)D	24	86.16**	
S	24	34.60	I

* Significant at .05

** Significant at .01

B. MEANS AND STANDARD DEVIATIONS OF RESPONDENT GROUPS FOR CLUSTER SCORES (N = 905, N = 878)

		905	878	905	878	905	878	905	878	905	878
GROUP		1		2		3		4		5	
SDVE	M	.690	.653	.646	.684	.645	.594	.621	.717	.640	.545
	SD	.188	.210	.196	.163	.180	.224	.159	.142	.138	.155
SDE	M	.632	.565	.590	.644	.610	.557	.518	.666	.554	.450
	SD	.271	.211	.230	.199	.263	.222	.199	.146	.160	.157
L.Sch.	M	.598	.593	.573	.637	.559	.533	.592	.686	.577	.476
	SD	.253	.233	.199	.192	.257	.258	.206	.146	.149	.134
A.Sch.	M	.545	.536	.521	.606	.487	.510	.484	.647	.560	.476
	SD	.257	.254	.233	.190	.222	.254	.211	.186	.142	.168
H.E.	M	.526	.580	.634	.642	.544	.559	.553	.695	.546	.476
	SD	.267	.240	.186	.181	.248	.231	.200	.150	.157	.169
St.Bd.	M	.735	.661	.608	.589	.658	.562	.662	.682	.559	.468
	SD	.217	.273	.257	.257	.292	.340	.217	.161	.163	.165
Adv.Gp.	M	.637	.646	.574	.631	.539	.559	.621	.670	.557	.482
	SD	.240	.216	.214	.196	.291	.252	.227	.163	.157	.165
Leg.	M	.770	.763	.597	.591	.684	.375	.658	.615	.565	.514
	SD	.188	.247	.198	.179	.179	.371	.143	.124	.132	.125
Others	M	.571	.569	.579	.576	.524	.472	.606	.702	.507	.465
	SD	.321	.249	.211	.193	.364	.332	.221	.144	.148	.136
St.Bd., Adv.& Leg.	M	.724	.658	.596	.623	.639	.545	.651	.667	.561	.482
	SD	.216	.227	.224	.203	.260	.277	.194	.159	.149	.165
Total	M	.614	.604	.597	.636	.576	.543	.587	.690	.572	.488
	SD	.260	.233	.209	.189	.264	.261	.201	.151	.154	.155

		905	878	905	878	905	878	905	878
GROUP		6		7		8		9	
SDVE	M	.790	.770	.708	.765	.833	.862	.789	.768
	SD	.185	.195	.174	.150	.220	.193	.251	.268
SDE	M	.676	.700	.682	.722	.526	.610	.545	.535
	SD	.300	.209	.208	.166	.345	.298	.389	.354
L.Sch.	M	.668	.649	.691	.739	.630	.693	.565	.557
	SD	.231	.268	.169	.168	.286	.256	.322	.333
A.Sch.	M	.652	.636	.652	.737	.656	.748	.603	.578
	SD	.221	.268	.172	.175	.245	.282	.305	.312
H.E.	M	.629	.658	.692	.732	.679	.695	.574	.541
	SD	.248	.239	.170	.154	.246	.255	.319	.336
St.Bd.	M	.667	.655	.688	.652	.542	.666	.607	.580
	SD	.274	.305	.181	.188	.306	.233	.277	.385
Adv.Gp.	M	.611	.679	.722	.706	.575	.698	.594	.617
	SD	.223	.277	.165	.189	.242	.272	.324	.330
Leg.	M	.803	.553	.692	.730	.699	.586	.798	.506
	SD	.153	.366	.187	.138	.214	.321	.218	.351
Others	M	.587	.505	.678	.674	.542	.517	.468	.335
	SD	.325	.339	.189	.178	.285	.299	.373	.373
St.Bd., Adv.& Leg.	M	.703	.666	.698	.701	.606	.685	.673	.603
	SD	.235	.287	.178	.185	.267	.271	.282	.338
Total	M	.680	.662	.690	.727	.660	.699	.611	.574
	SD	.256	.271	.178	.169	.287	.279	.335	.352

GROUP		10C		11C		12C		13C	
SDVE	M	1.317	1.372	1.115	1.262	1.221	1.253	1.266	1.277
	SD	.215	.234	.184	.221	.226	.255	.272	.305
SDE	M	1.388	1.417	1.068	1.258	1.258	1.263	1.276	1.307
	SD	.256	.231	.272	.229	.250	.272	.269	.378
L.Sch.	M	1.396	1.403	1.183	1.292	1.312	1.349	1.364	1.399
	SD	.250	.276	.253	.244	.262	.283	.326	.300
A.Sch.	M	1.435	1.470	1.185	1.281	1.335	1.411	1.374	1.460
	SD	.227	.279	.239	.237	.232	.285	.316	.297
H.E.	M	1.488	1.431	1.174	1.289	1.391	1.352	1.409	1.368
	SD	.265	.274	.238	.235	.262	.249	.327	.313
St.Bd.	M	1.269	1.326	1.127	1.260	1.249	1.267	1.222	1.315
	SD	.259	.369	.323	.348	.274	.269	.345	.338
Adv.Gp.	M	1.379	1.353	1.273	1.241	1.268	1.322	1.228	1.321
	SD	.256	.276	.288	.295	.250	.279	.360	.308
Leg.	M	1.195	1.228	1.088	1.334	1.107	1.418	1.123	1.288
	SD	.231	.398	.164	.370	.191	.330	.264	.406
Others	M	1.379	1.456	1.214	1.357	1.335	1.377	1.341	1.373
	SD	.334	.320	.361	.322	.293	.318	.328	.313
St.Bd., Adv.& Leg.	M	1.268	1.339	1.148	1.251	1.202	1.308	1.188	1.318
	SD	.255	.299	.273	.307	.249	.266	.321	.317
Total	M	1.379	1.403	1.159	1.285	1.294	1.322	1.323	1.350
	SD	.266	.276	.263	.260	.262	.279	.315	.319

C . SUMMARY OF ANALYSIS OF VARIANCE TESTS ON CLUSTER SCORES (N=905)

GROUP	CLUSTER												
	1	2	3	4	5	6	7	8	9	10C	11C	12C	13C
State Division of Vocational Education (SDVE), State Department of Education--excluding SDVE, (SDE), Local Schools (L.Sch.), Area Schools (A.Sch.), Higher Education (H.E.), ∠Combination of State Board of Education--St.Bd.--, Legislators--Leg.--, and State Advisory Groups--Adv. Gps.--, (ADV.)_7, Other Respondents (Others).	.01	.01	.01	.01	.01	.01	NS	.01	.01	.01	.01	.01	.01
St.Bd., Leg., and Adv.Gp.	NS	NS	NS	NS	NS	.05	NS	NS	.05	NS	NS	.05	NS
St.Bd., Leg., Adv.Gp., and SDVE.	NS	NS	NS	NS	.01	.01	NS	.01	.01	.05	.05	NS	NS
St.Bd., Leg., Adv.Gp., and Others	.01	NS	NS	NS	NS	.01	NS	NS	.01	.05	NS	.01	.01
A.Sch., L.Sch., H.E., and SDVE	.01	.01	.01	.01	.01	.01	NS	.01	.01	.01	.01	.01	.01
A.Sch., L.Sch., and H.E.	.05	.01	NS	.01	NS	NS	NS	NS	NS	.01	NS	.05	NS

SUMMARY OF ANALYSIS OF VARIANCE TESTS ON CLUSTER SCORES (N=878)

GROUP	CLUSTER												
	1	2	3	4	5	6	7	8	9	10C	11C	12C	13C
State Division of Vocational Education (SDVE), State Department of Education--excluding SDVE, (SDE), Local Schools (L.Sch.), Area Schools (A.Sch.), Higher Education (H.E.), ⁄Combination of State Board of Education--St.Bd.--, Legislators--Leg.--, and State Advisory Groups--Adv. Gps.--, (ADV.)⁄, Other Respondents (Others).	.01	.01	.01	.05	.01	.01	.05	.01	.01	.01	.05	.01	.01
St.Bd., Leg., and Adv.Gp.	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
St.Bd., Leg., Adv.Gp., and SDVE	NS	.05	.05	.05	.01	.01	.01	.01	.01	NS	NS	NS	NS
St.Bd., Leg., Adv.GP., and Others	.05	NS	NS	NS	NS	.01	NS	.01	.01	.05	.05	NS	NS
A.Sch., L.Sch., H.E., and SDVE	.01	.05	.05	.05	.01	.01	NS	.01	.01	NS	NS	.01	.01
A.Sch., L.Sch., and H.E.	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

D . CORRELATION MATRIX FOR ITEM CLUSTER SCORES, SECTION IV SCORES, AND COMMON ITEM CLUSTER DIFFERENCE SCORES (N=905)

Item Cluster	1	2	3	4	5	6	7	8	9	10C	11C	12C	13C
1	100*	36	58	32	28	59	17	09	46	-86	-37	-49	-35
2		100	26	51	02	25	40	28	27	-14	03	-04	-03
3			100	37	17	41	14	11	27	-50	-72	-31	-20
4				100	07	23	33	17	18	-19	20	-07	-03
5					100	28	02	12	27	-25	-12	-24	-18
6						100	35	32	73	-48	-25	-64	-34
7							100	54	24	03	13	18	24
8								100	43	04	03	20	43
9									100	-37	-15	-38	-42
10C										100	45	55	44
11C											100	32	24
12C												100	70
13C													100

* Two-place decimal understood.

CORRELATION MATRIX FOR ITEM CLUSTER SCORES, SECTION IV SCORES, AND COMMON ITEM CLUSTER DIFFERENCE SCORES (N=878)

Item Cluster	1	2	3	4	5	6	7	8	9	10C	11C	12C	13C
1	100*	22	59	25	49	52	18	06	42	-80	-51	-45	-41
2		100	31	45	06	25	41	34	25	-09	-18	-07	-01
3			100	34	30	48	26	18	37	-56	-83	-32	-21
4				100	13	18	27	15	15	-14	07	-12	-05
5					100	25	09	07	23	-35	-25	-25	-23
6						100	32	27	76	-54	-41	-73	-49
7							100	60	31	-10	-16	14	15
8								100	46	04	-11	15	33
9									100	-40	-32	-46	-51
10C										100	56	54	47
11C											100	31	23
12C												100	72
13C													100

* Two-place decimal understood.

E.RESULTS OF CHI-SQUARE TESTS FOR DIFFERENCES IN GROUP DOES AND SHOULD RESPONSE FREQUENCIES FOR THE SAME ITEM FOR SECTIONS II AND VII OF THE GROUP INTERVIEW GUIDE

Section II

Item	SDVE N=394	SDE N=155	L.SCH N=415	A.SCH N=118	H.E. N=229	LEG. ST.BD. ADV.GP. N=200	OTHER N=272
1	100.62	42.16**	208.66	71.84	127.26	57.27	72.79
2	93.59	49.42	123.81	50.57	92.85	53.57	78.43
3	270.54	111.21	308.82	103.74	195.02	83.42	115.13
4	244.89	142.72	289.59	89.41	194.92	87.11	146.66
5	24.45	11.24*	28.75	7.68*	7.31*	14.53	19.41
6	84.97	29.56**	141.62	61.87	97.77	58.25	72.38
7	302.97	114.20	145.13	64.94	166.47	65.31	103.13
8	200.95	94.12	195.20	65.71	155.46	74.15	124.14
9	272.95	1.91*	216.51	80.33	184.37	59.76	98.05
10	26.46	4.75*	45.92	5.95*	26.49	9.77*	11.70*
11	13.74	29.33**	7.81*	.93*	7.97*	7.61*	8.46*
12	149.10	126.11	107.96	37.32	99.84	39.99	87.47
13	250.46	29.11	217.04	97.43	180.03	79.91	127.18
14	99.00	9.23*	107.80	31.81	64.89	33.64	43.88
15	46.41	35.29	76.80	28.57	41.81	27.58	50.11
16	94.63	117.65	87.08	22.83	53.69	31.38	54.11
17	343.12	97.34	370.29	116.91	205.16	119.90	238.68
18	216.89	87.37	204.53	67.95	149.87	61.35	125.14
19	101.24	91.33	131.52	64.28	92.82	59.80	56.18
20	223.65	159.24	270.90	116.86	174.27	84.94	133.95
21	264.33	60.66	354.13	106.44	217.55	125.53	199.79
22	205.68	130.77	186.40	54.67	87.55	73.47	104.05

All Items significant at the .01 level for four degrees of freedom (DF) unless indicated otherwise

* = Non-significant at the .01 level
** = Three degrees of freedom

Section II

Item	SDVE	SDE	L.SCH	A.SCH	H.E.	LEG. ST.BD. ADV.GP.	OTHER
	N=394	N=155	N=415	N=118	N=229	N=200	N=272
23	293.25	130.77	256.31	99.21	201.64	82.01	148.95
24	17.61	18.07	25.39	8.03*	21.11	21.57	37.92
25	89.93	79.46	86.84	22.32	65.59	48.90	70.12
26	42.13	31.01	14.82	11.67	27.27	30.87	27.85
9A	102.00	49.05	110.34	52.38	69.79	24.93	52.72
10A	80.37	42.89	109.67	41.66	94.76	23.47	66.63
11A	5.32*	4.08*	2.45*	3.79*	4.91*	2.11*	.26*
12A	62.01	27.78	108.61	31.96	76.79	21.74	50.08
13A	61.60	43.80**	81.56	37.91	68.83	13.10**	36.10**
14A	8.13*	3.53*	21.20	5.68*	7.92*	6.15*	10.62*

Section VII

1	174.98	73.88	181.39	67.78**	150.70	64.48	184.85
2	202.79	100.25	252.79	81.90	155.30	100.73	197.40
3	249.48	117.04	376.37	85.51	185.23	116.67	228.13
4	129.32	63.76**	244.48	62.42	128.70	65.51	165.14
5	221.26	131.24	331.61	108.13	219.26	118.92	206.38
6	240.98	95.65	270.77	82.48	218.16	104.80	233.80
7	102.40	44.16	177.01	32.52	107.13	48.74	111.96
8	17.03	18.16	78.51	8.75*	15.31	33.84	108.99
9	47.20	12.56*	154.98	27.13	47.11	47.09	136.35
10	16.10	14.71**	53.45	4.45*	15.62	33.79	101.45
11	65.96	23.17	146.16	29.67**	56.32	69.37	171.89
12	195.53	81.83	321.20	74.13	161.13	91.69	232.95

All items significant at the .01 level for four degrees of freedom (DF) unless indicated otherwise

* = Non-significant at the .01 level
** = Three degrees of freedom

F. MEAN CLUSTER SCORES OF SELECTED RESPONDENT GROUPS

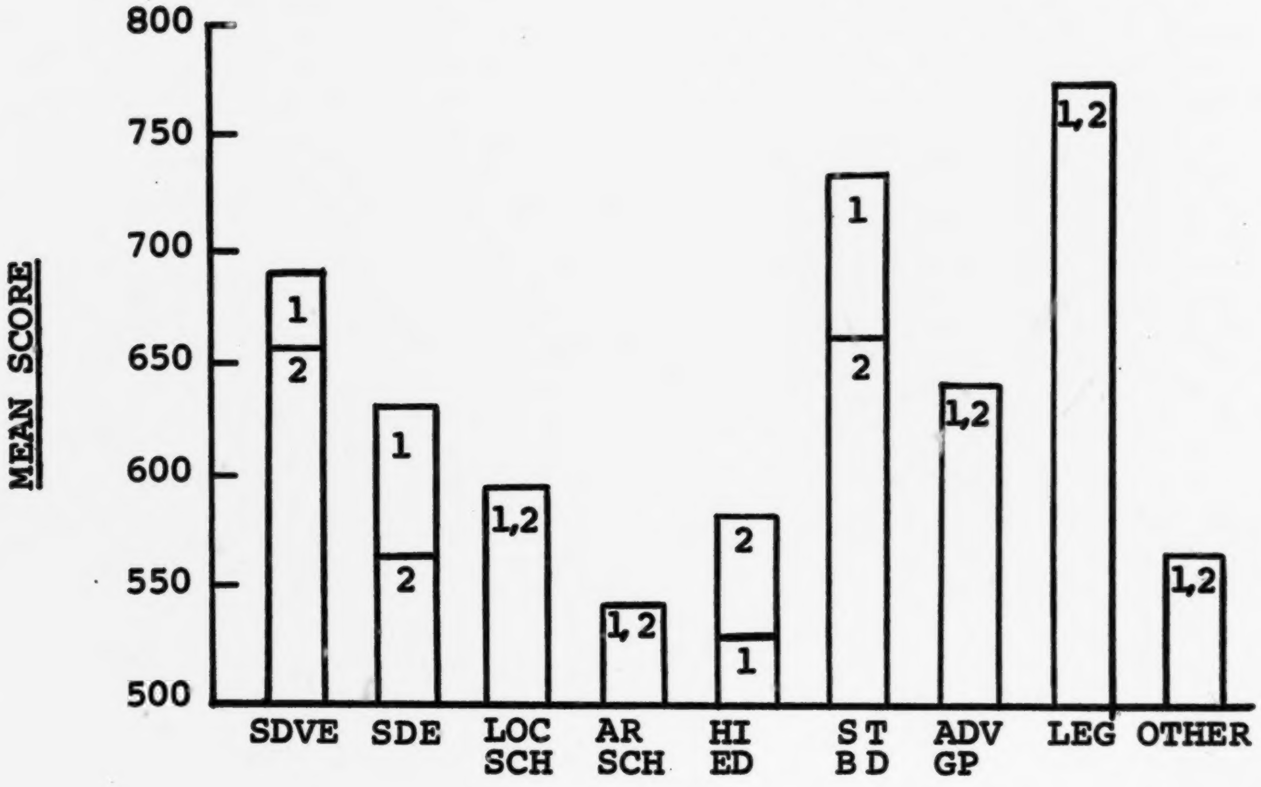
The following graphs picture the mean scores of selected respondent groups on each of the item clusters.

Abbreviations:

SDVE	State Division of Vocational Education
SDE	State Department of Education, excluding SDVE
LOC SCH	Local Schools
AR SCH	Area Schools
HI ED	Higher Education
ST BD	State Board of Education
ADV GP	Advisory Committee or Group (State Level)
LEG	Legislators
OTH	Other Respondents

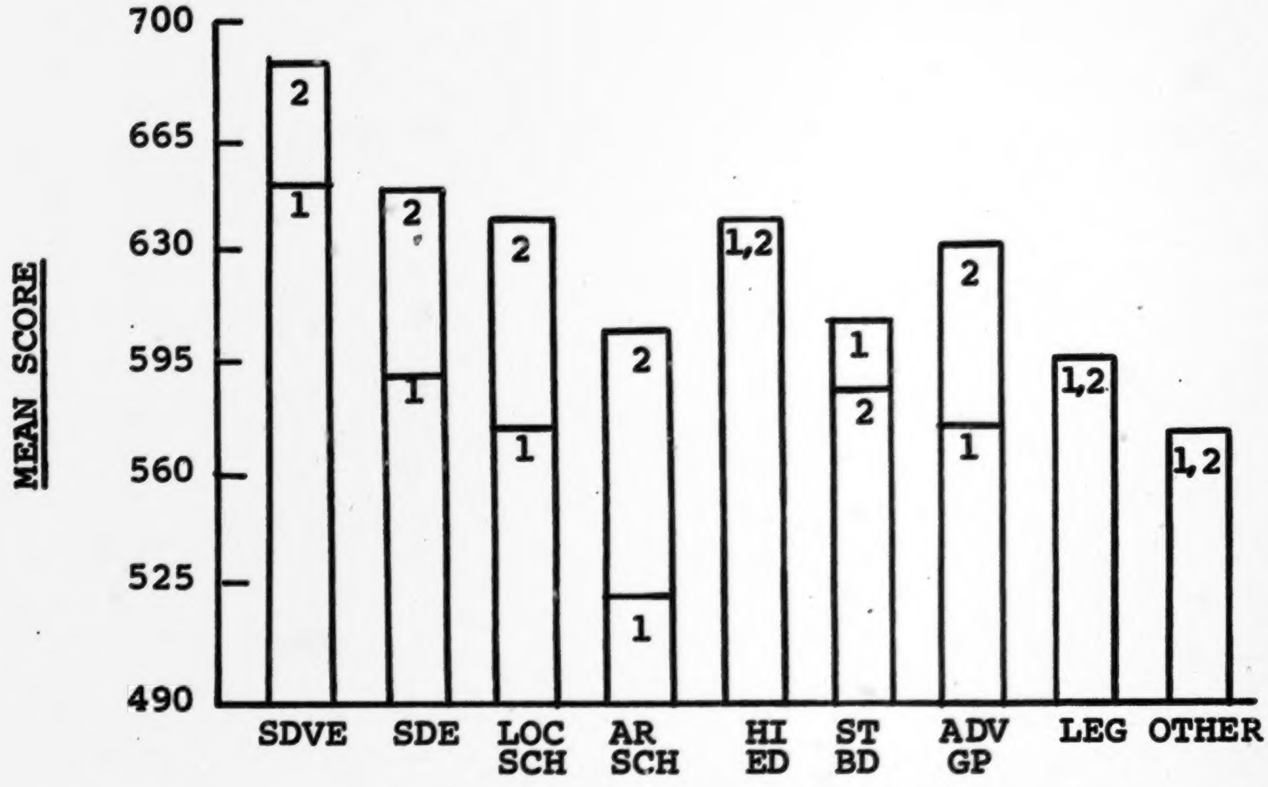
1 indicates mean score of sample N=905
2 indicates mean score of sample N=878

For graph purposes, mean scores are reported as whole numbers. In computation, mean scores were actually three place decimals (e.g. 500 on the graph is equivalent to a mean score of .500).

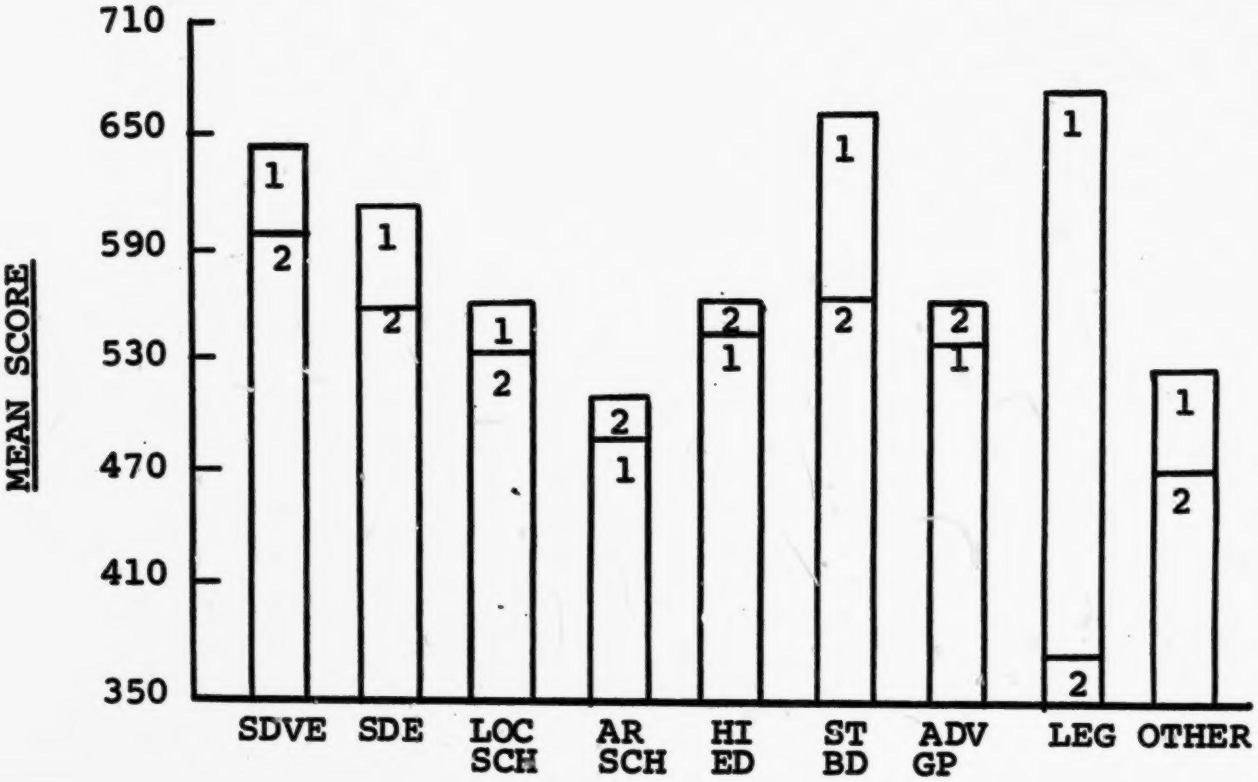


Cluster 1, Actual Leadership

1 = Respondent group (N=905)
2 = Respondent group (N=878)

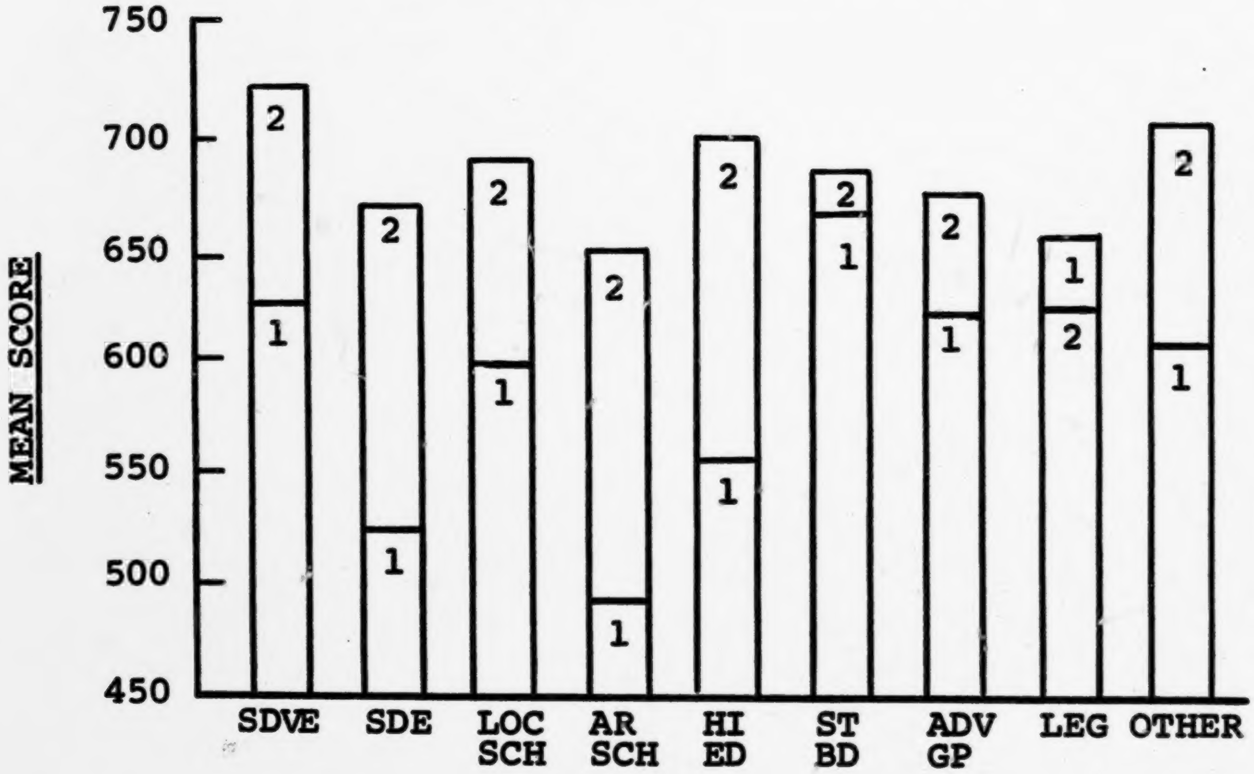


Cluster 2, Ideal Leadership

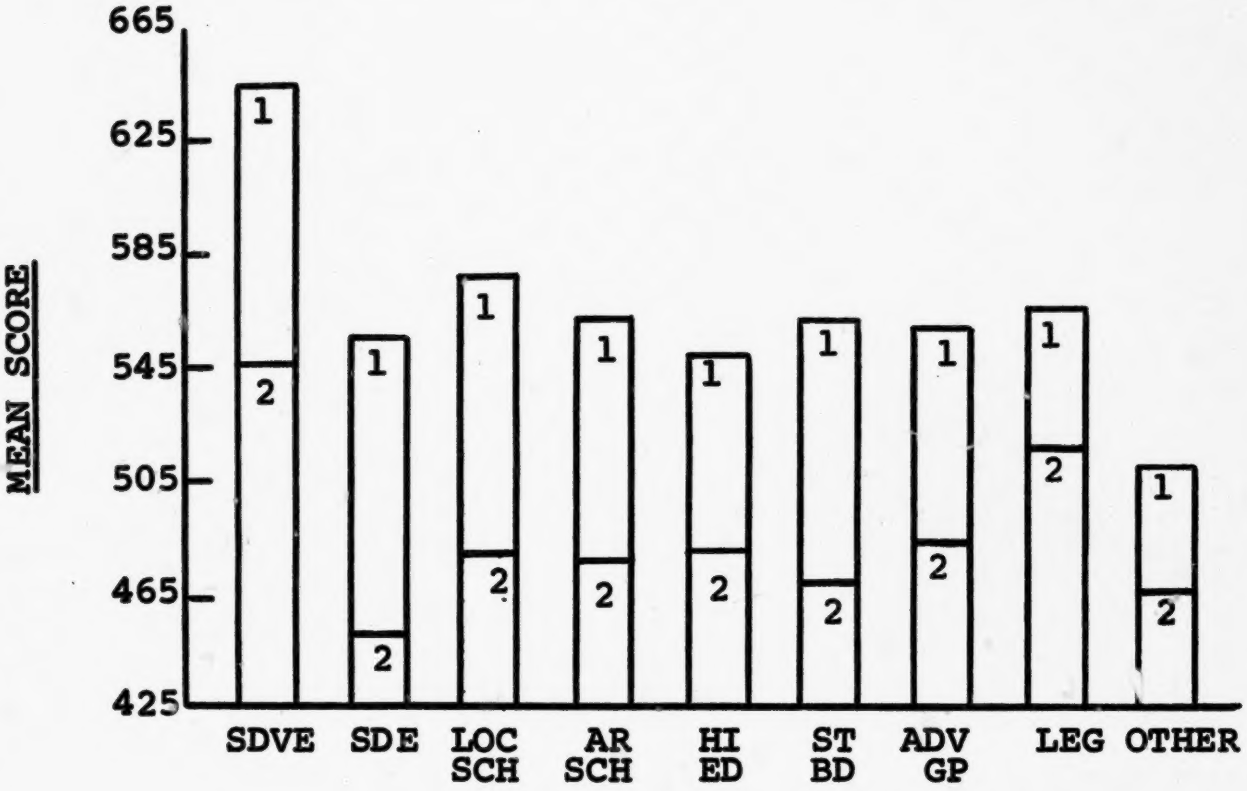


Cluster 3, Actual Regulation

1 = Respondent group (N=905)
2 = Respondent group (N=878)

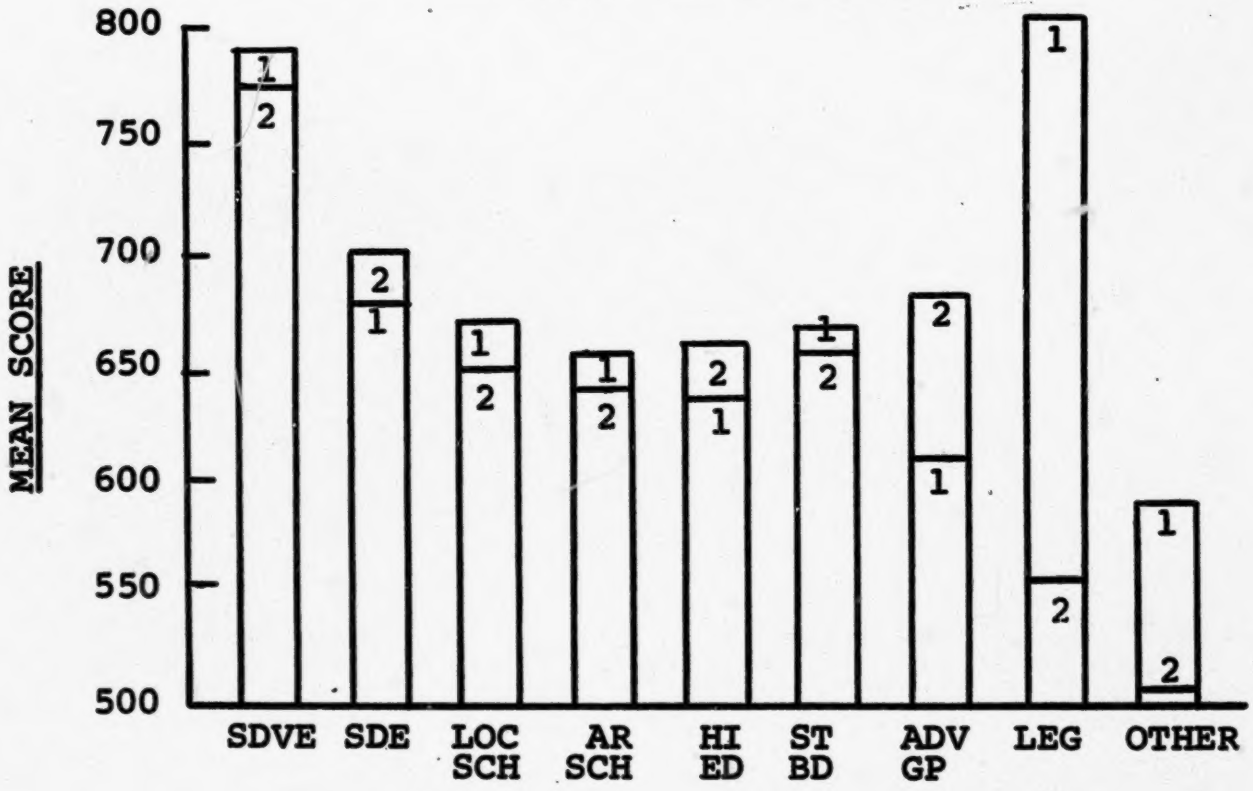


Cluster 4, Ideal Regulation

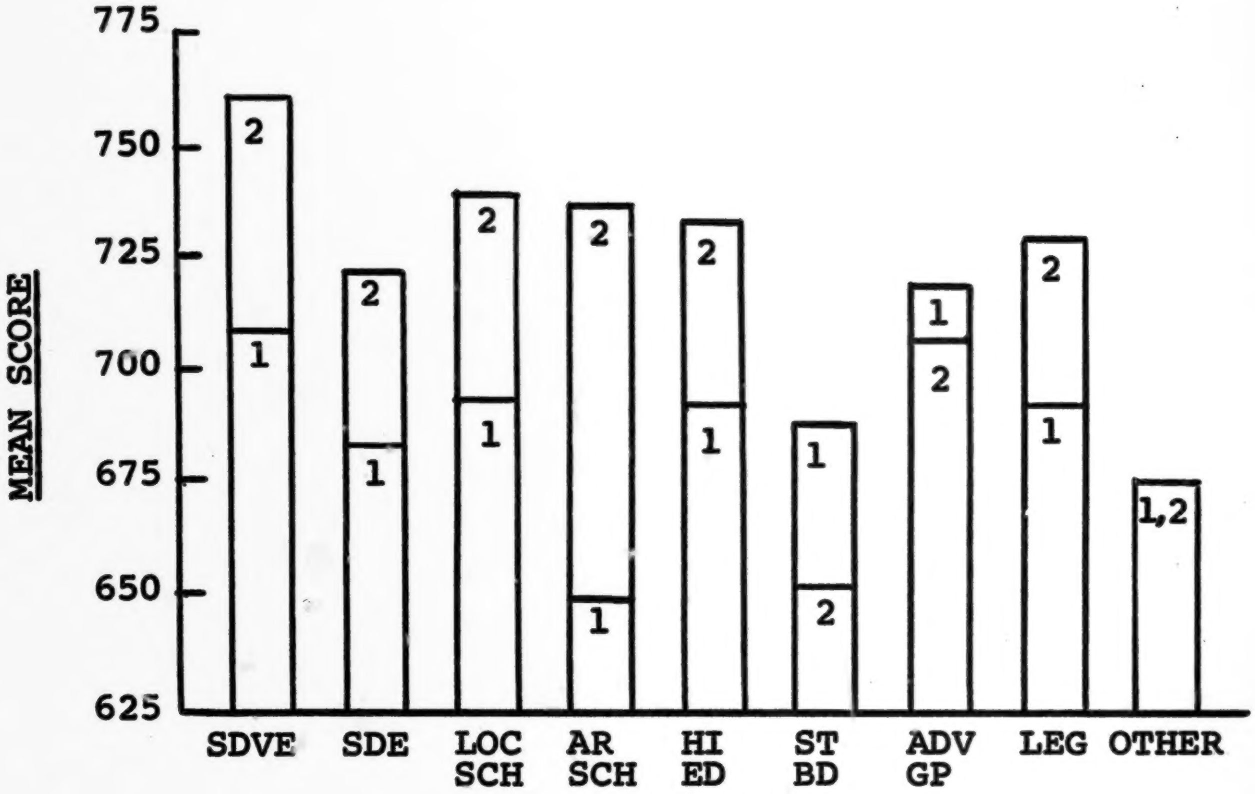


Cluster 5, Attitude

1 = Respondent group (N=905)
2 = Respondent group (N=878)

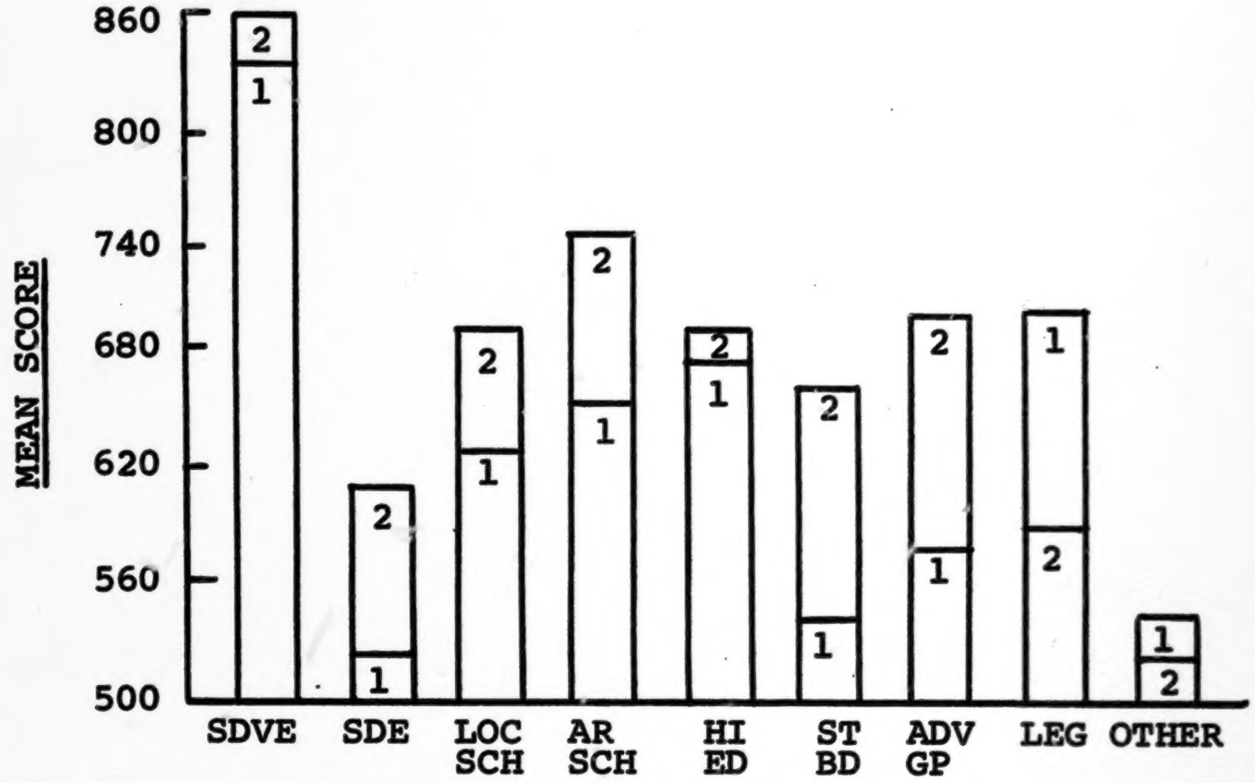


Cluster 6, Actual Involvement

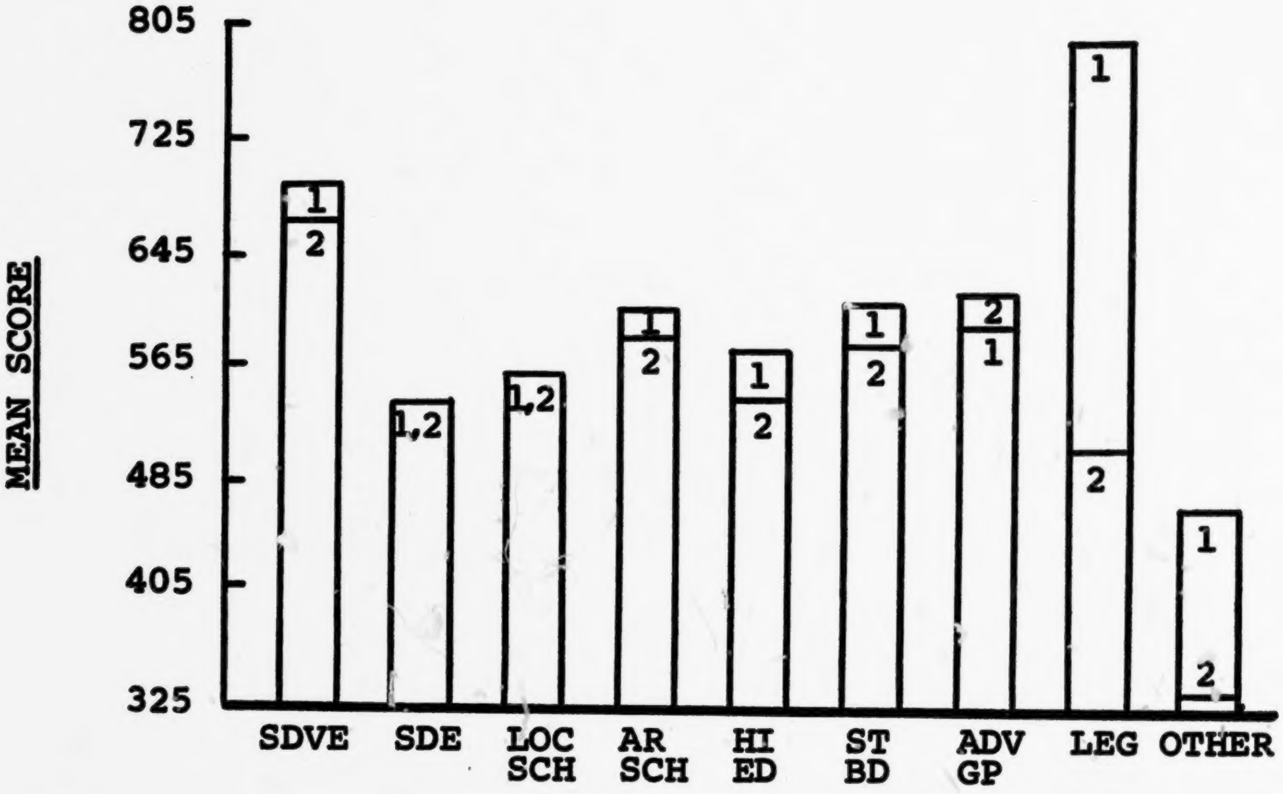


Cluster 7, Ideal Involvement

1 = Respondent group (N=905)
2 = Respondent group (N=878)

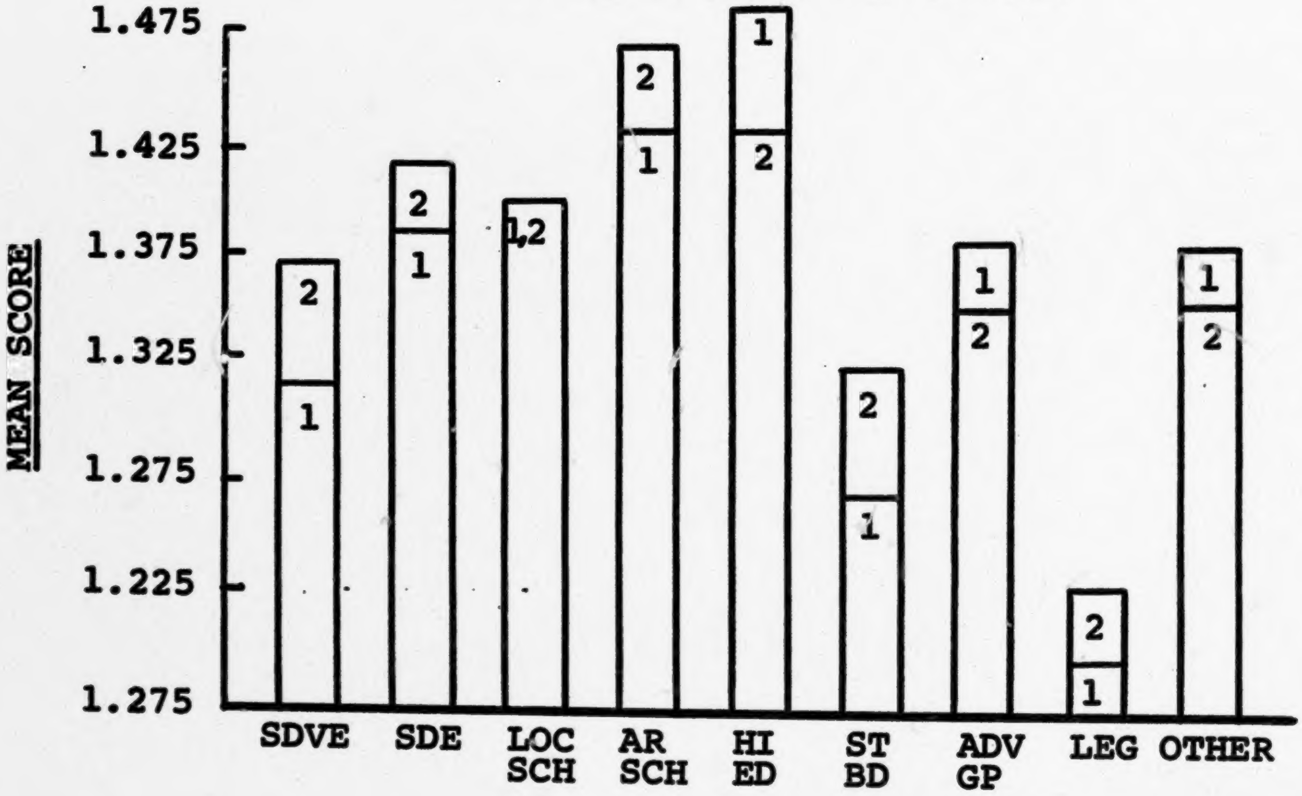


Cluster 8, Section IV; Ideal (Involvement)

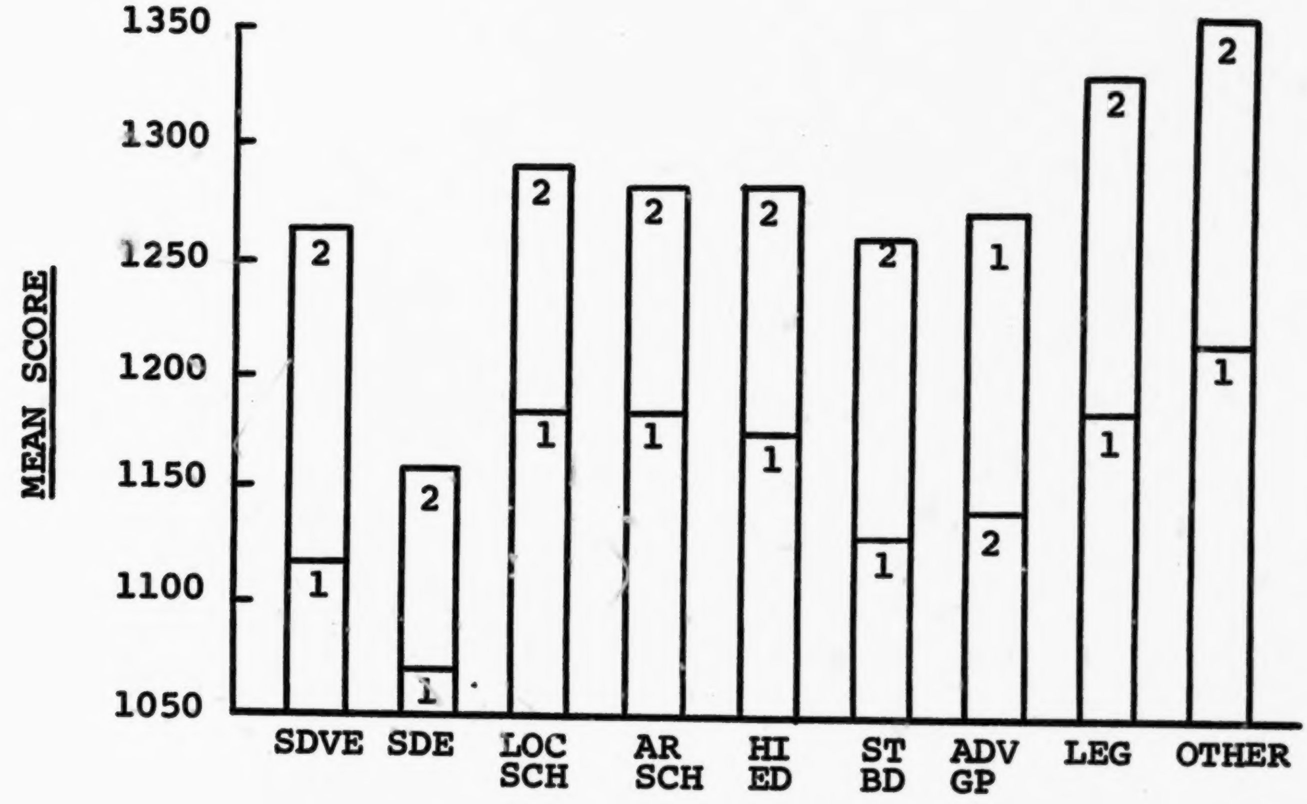


Cluster 9, Section IV; Actual (Involvement)

1 = Respondent group (N=905)
2 = Respondent group (N=878)

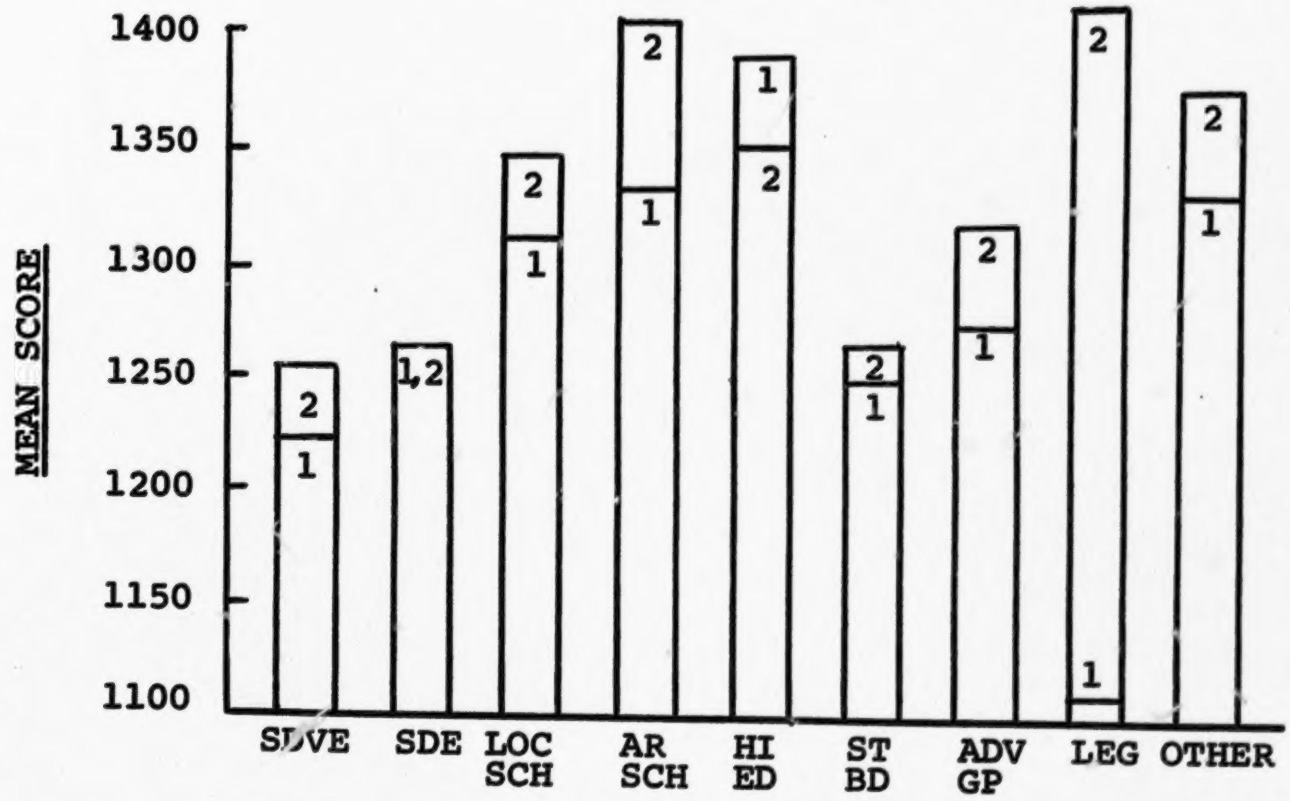


Cluster 10C, Leadership Difference

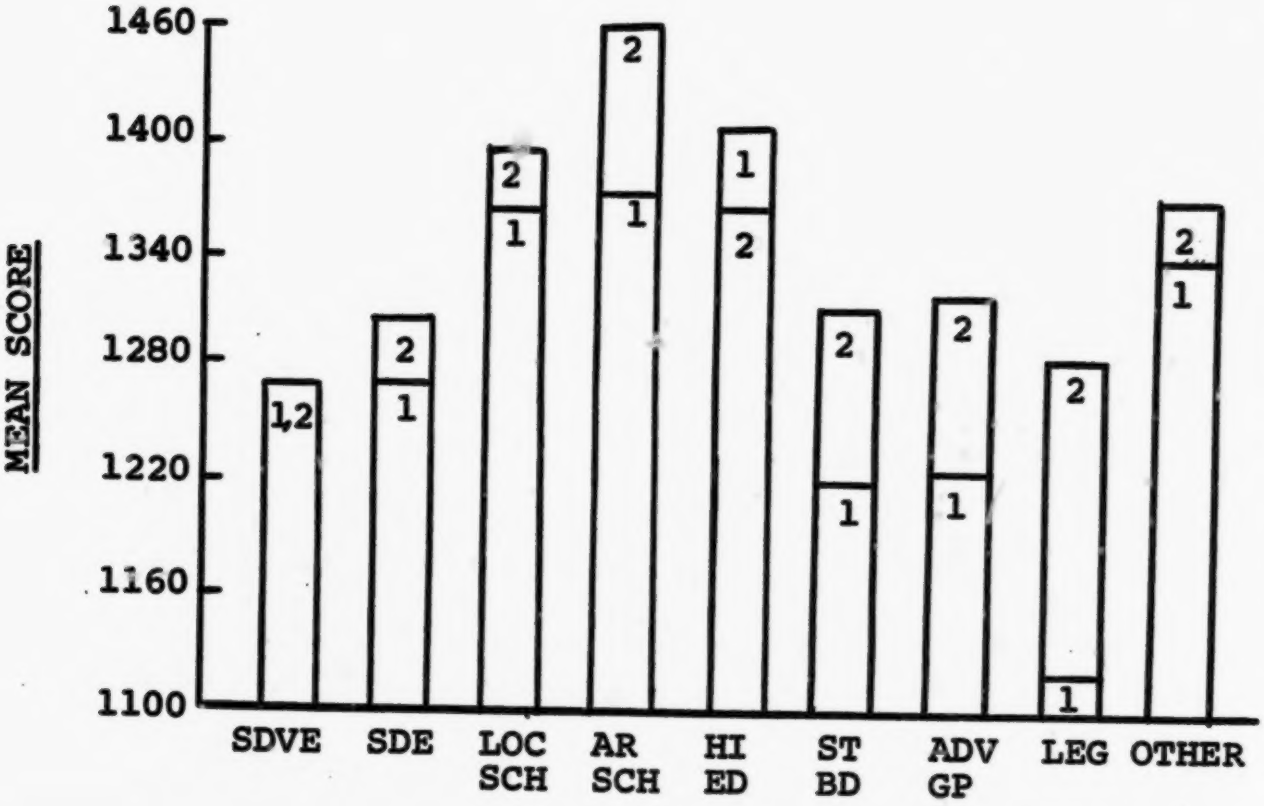


Cluster 11C, Regulation Difference

1 = Respondent group (N=905)
2 = Respondent group (N=878)



Cluster 12C, Involvement Difference



Cluster 13C, Section IV Difference

1 = Respondent group (N=905)
2 = Respondent group (N=878)

G. RELATIONSHIP OF ACTUAL AND IDEAL INVOLVEMENT OF SELECTED RESPONDENT GROUPS IN SDVE ACTIVITIES

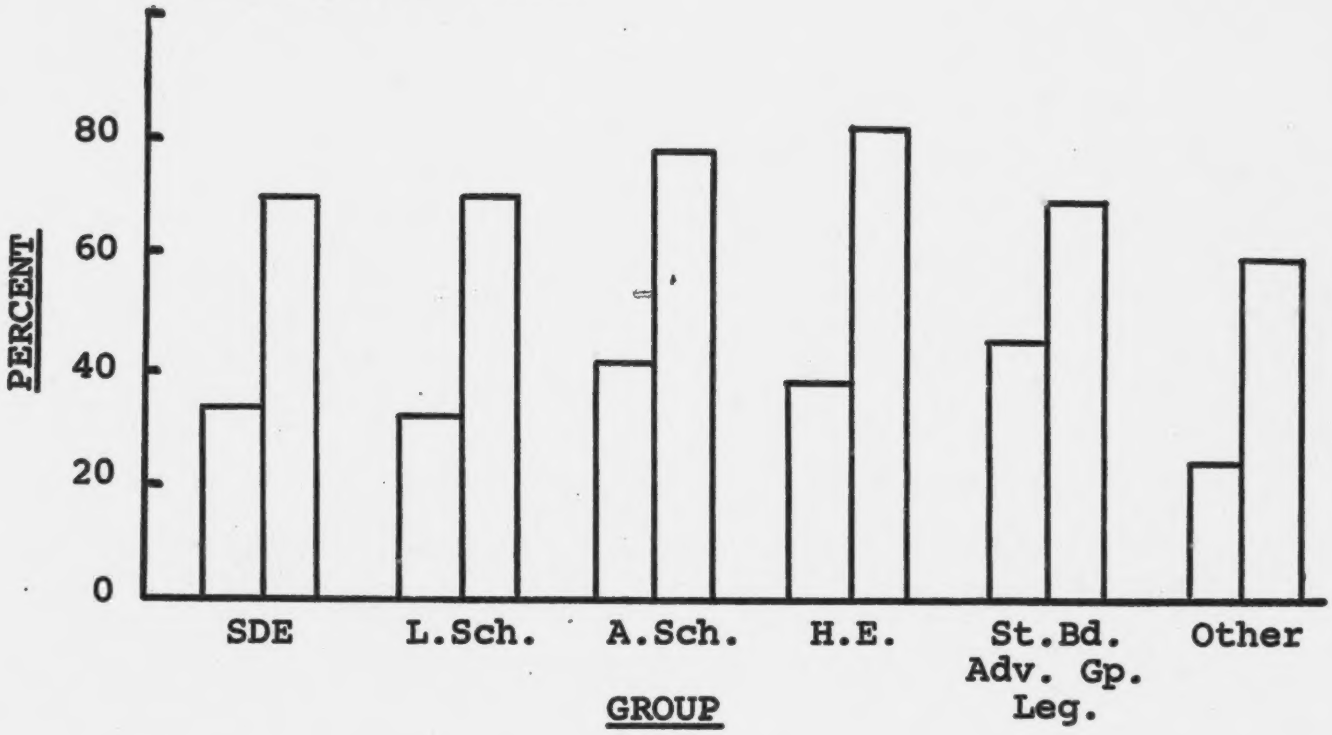
The following graphs portray the relationship between a respondent group's "DOES" and "SHOULD" responses to involvement in selected SDVE activities. The percent of involvement reported on these graphs was obtained by totalling the percent of the respondent group's responses in two response categories--"almost always" and "frequently."

Abbreviations of Respondent Groups:

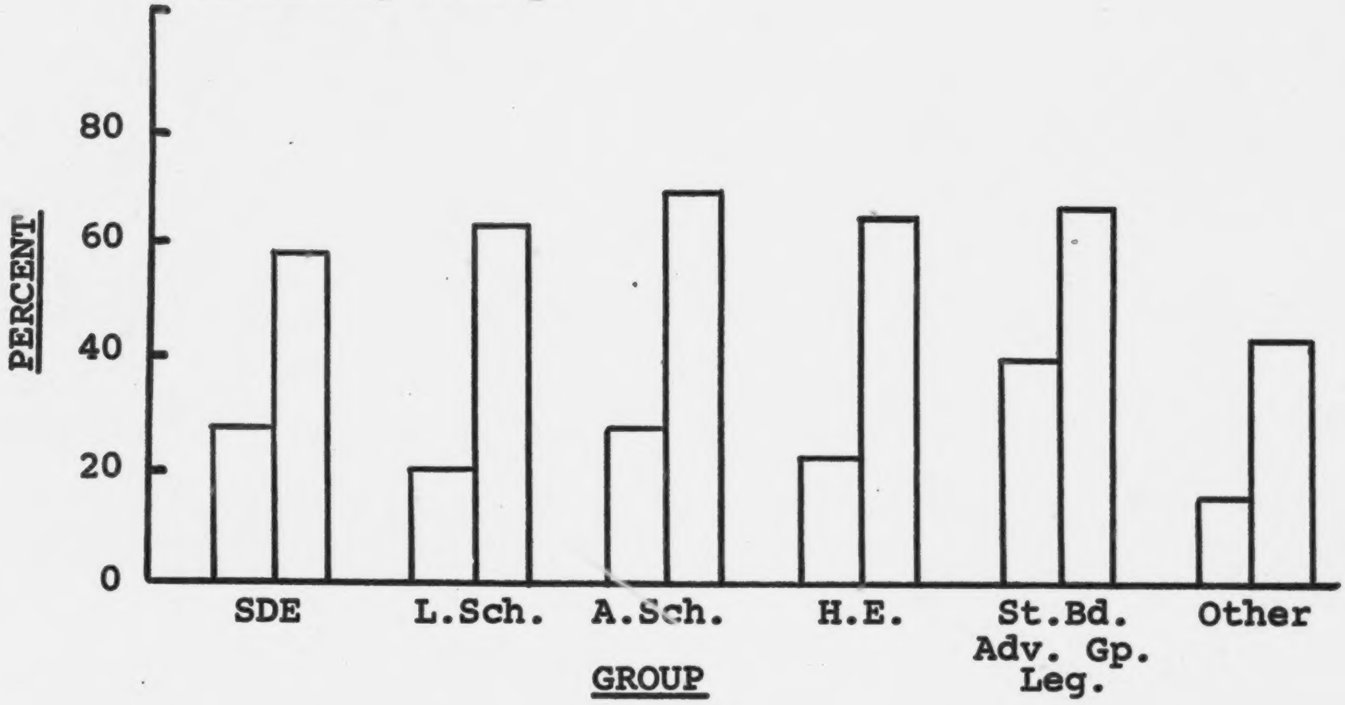
SDE	State Department of Education (excluding State Division of Vocational Education)
L. Sch.	Local Schools
A. Sch.	Area Schools (Including Junior or Community Colleges)
H.E.	Higher Education
St. Bd.	State Board of Education
Adv. Gp.	State Level Vocational Advisory Groups
Leg.	Legislators
Other	Other Respondents (Business, Agriculture, etc.)

How Frequently DOES and How Frequently SHOULD the Division Involve Persons Like You in:

Planning Activities?



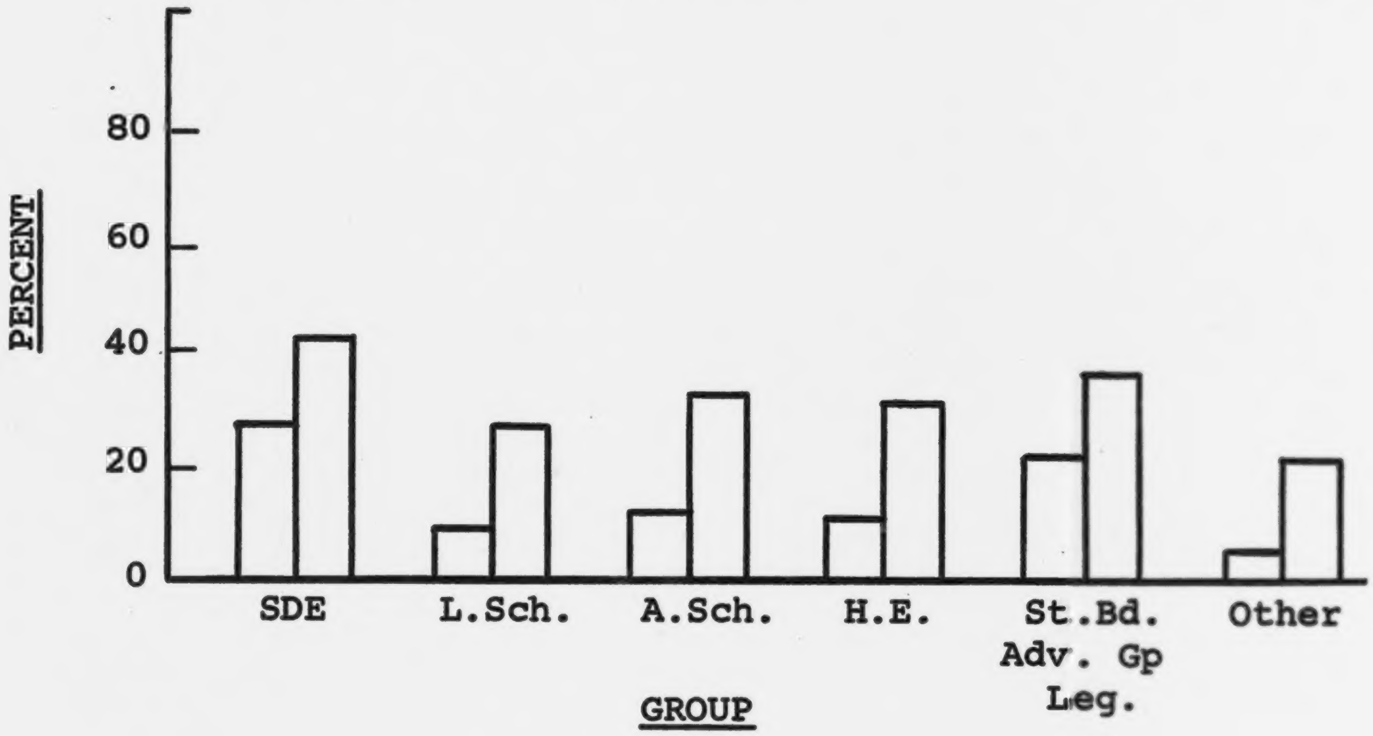
Formulating Policy?



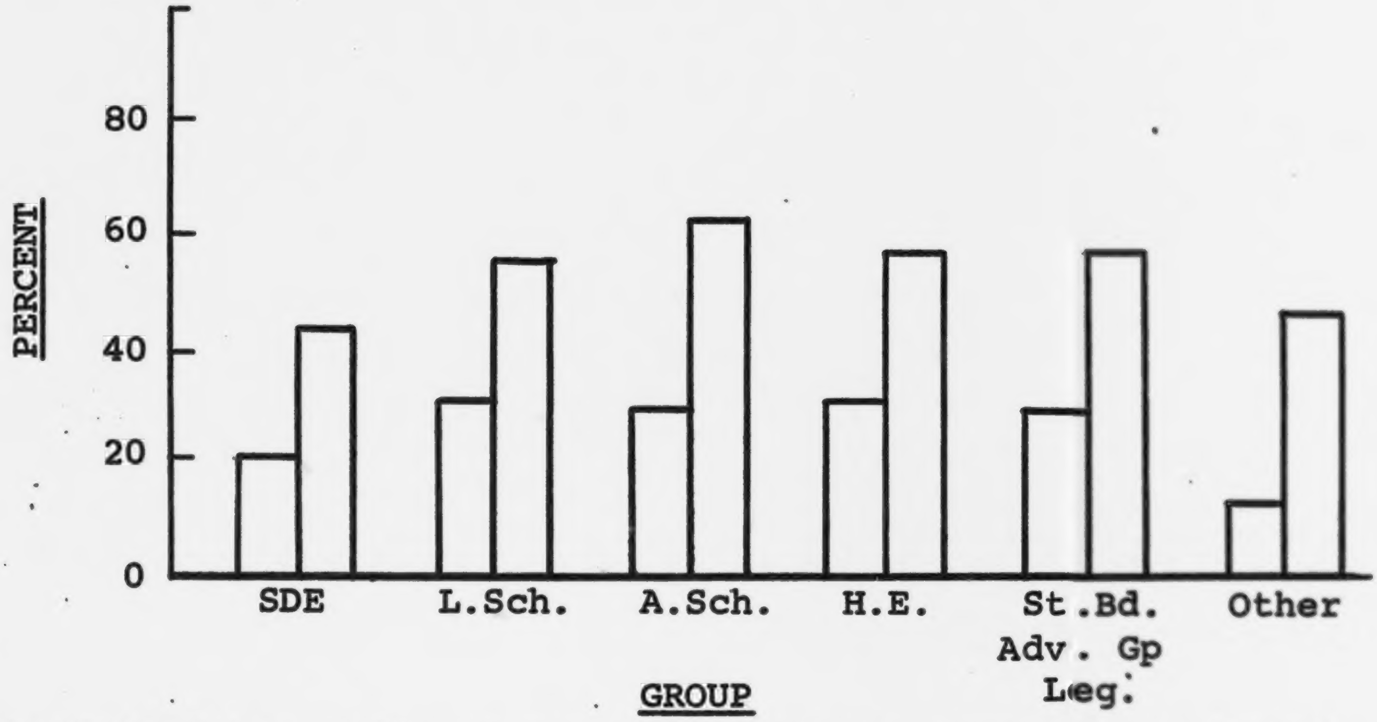
Left-hand bar reflects perceived present involvement (Does)
Right-hand bar reflects expected (ideal) involvement (Should)

How Frequently DOES and How Frequently SHOULD the Division Involve Persons Like You in:

Determining its staff needs?



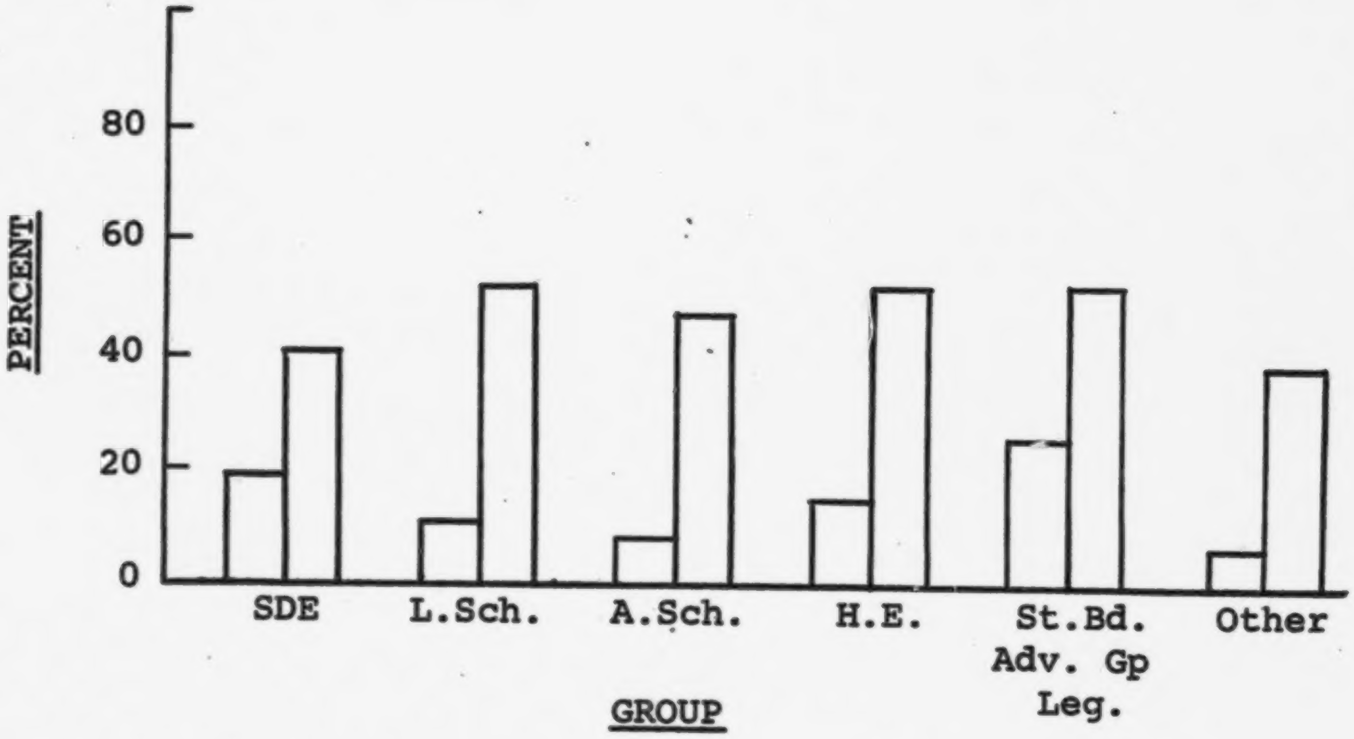
Promotional activities?



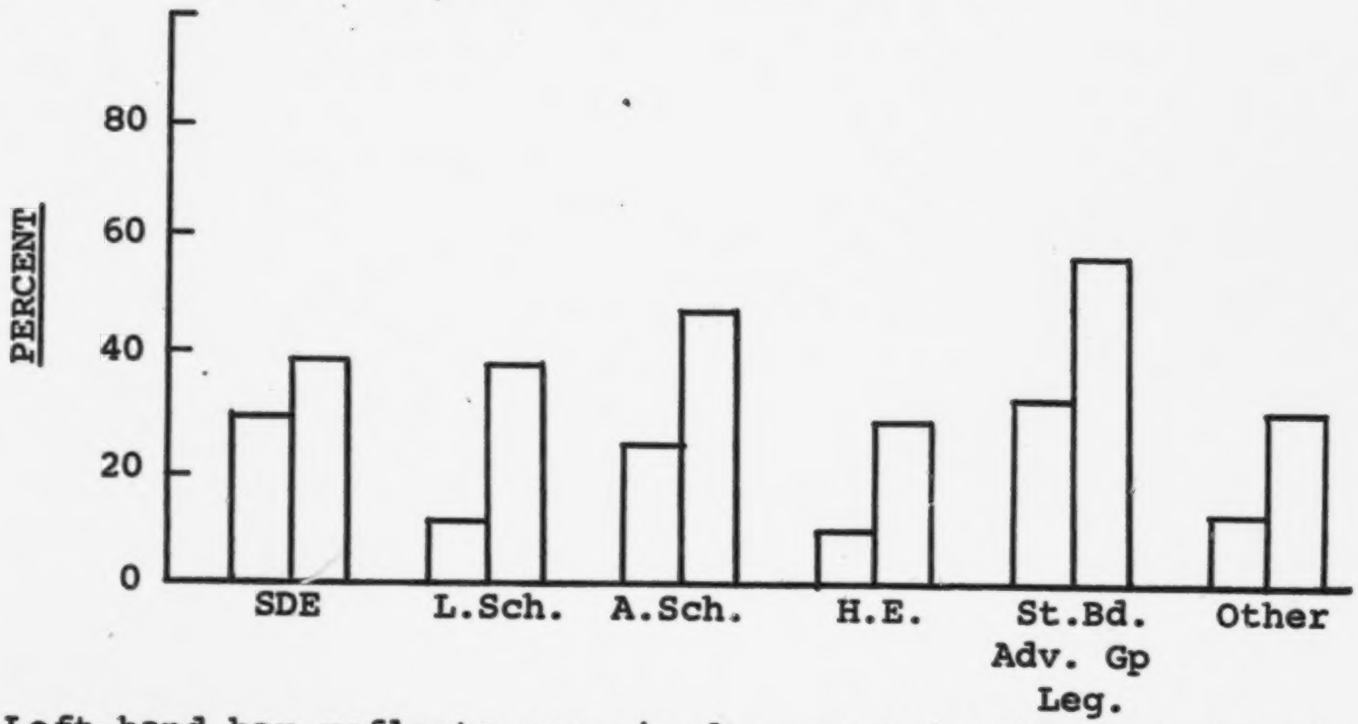
Left-hand bar reflects perceived present involvement (Does)
Right-hand bar reflects expected (ideal) involvement (Should)

How Frequently DOES and How Frequently SHOULD the Division Involve Persons Like You in:

Evaluating itself?



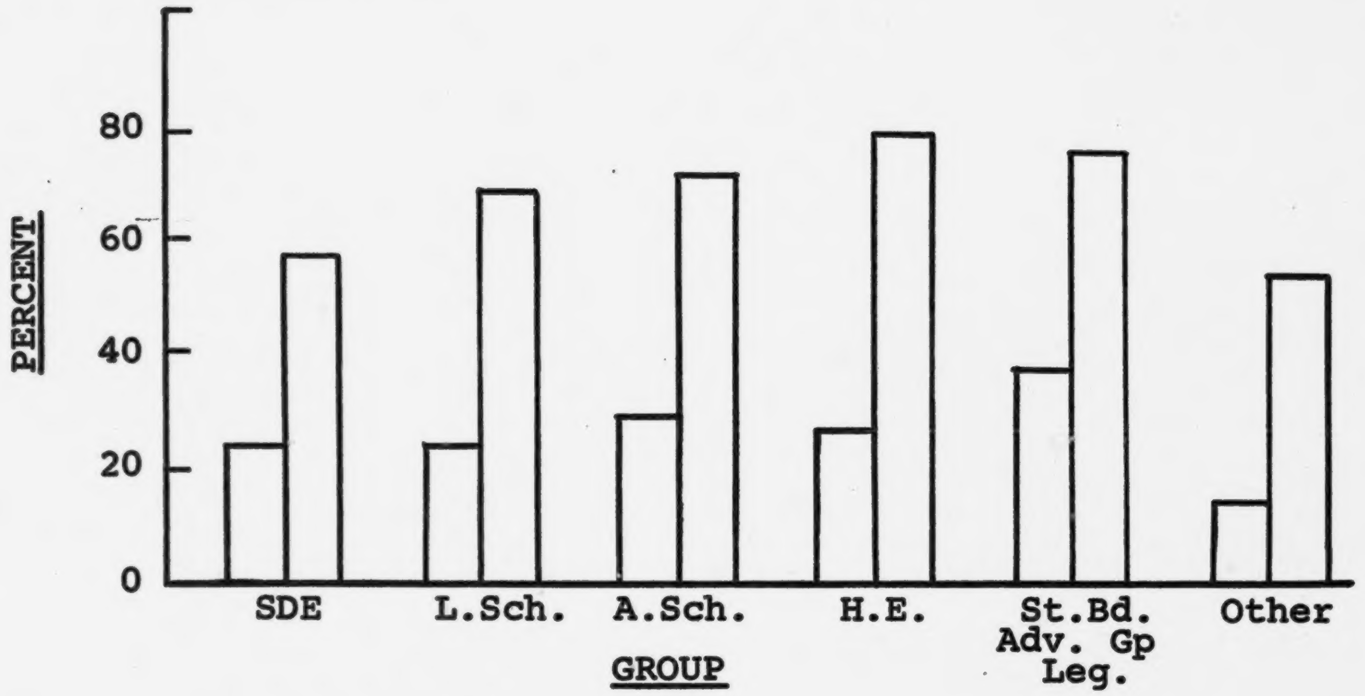
Developing budget requests?



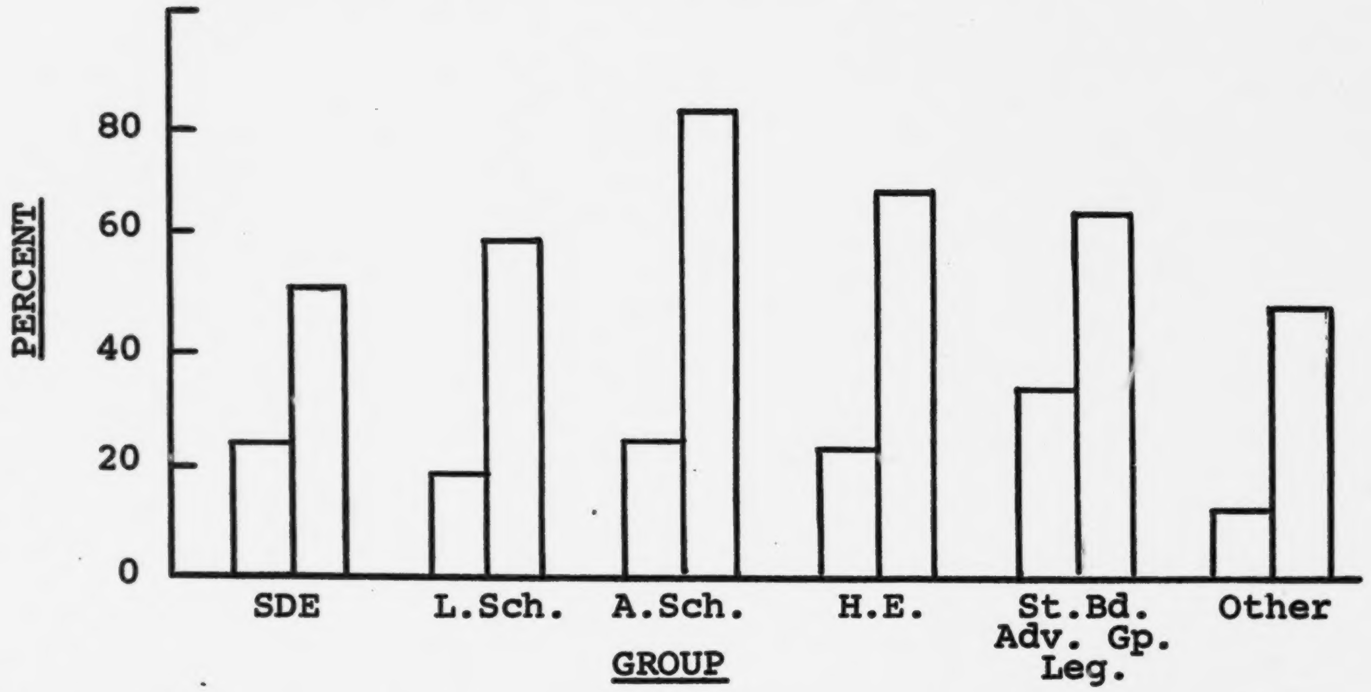
Left-hand bar reflects perceived present involvement (Does)
Right-hand bar reflects expected (ideal) involvement (Should)

How Frequently DOES and How Frequently SHOULD the Division Involve Persons Like You in:

Setting goals?



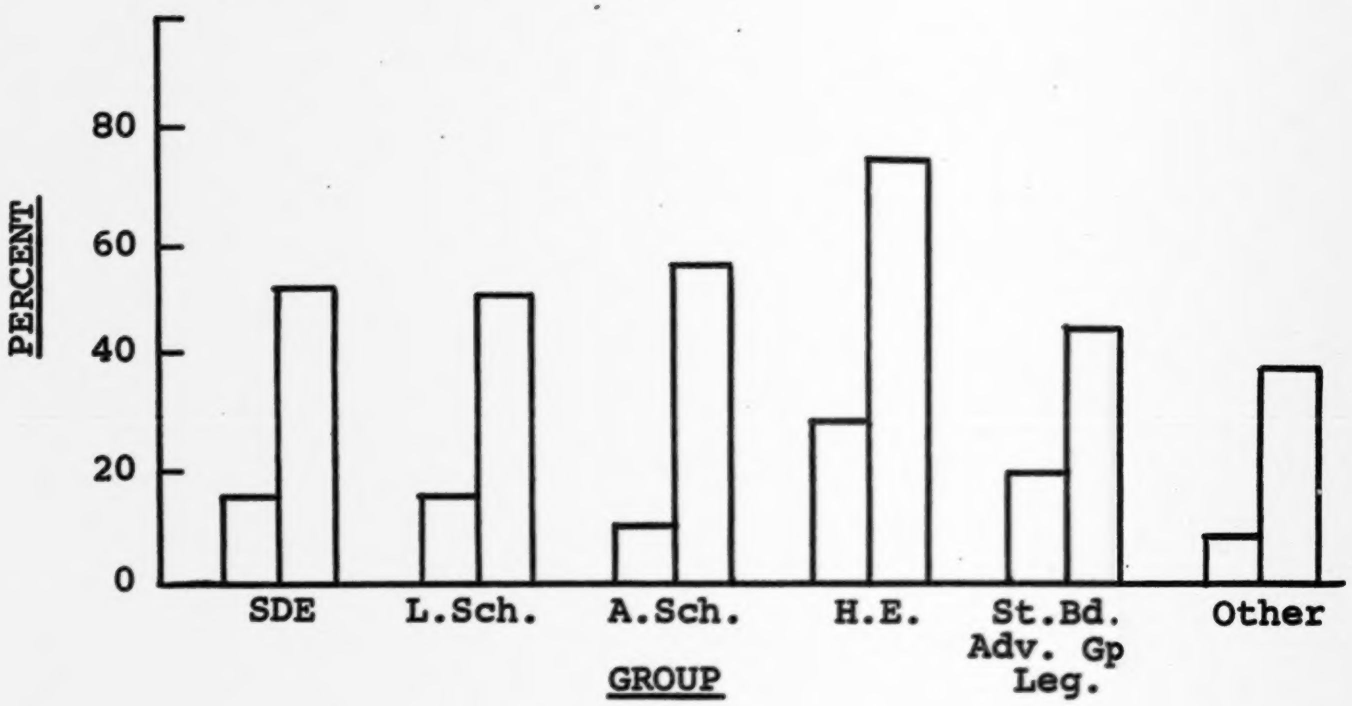
Defining Problems and assigning priorities?



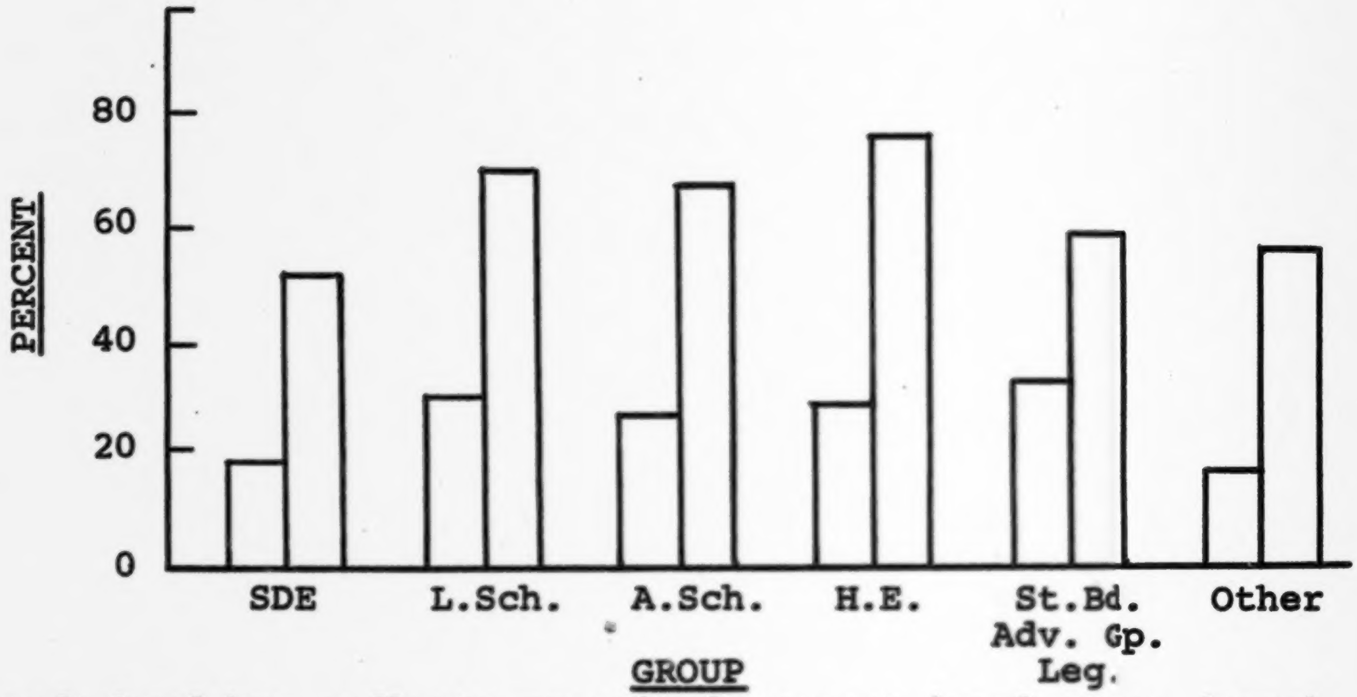
Left-hand bar reflects perceived present involvement (Does)
Right-hand bar reflects expected (ideal) involvement (Should)

How Frequently DOES and How Frequently SHOULD the Division Involve Persons Like You in:

Research activities?



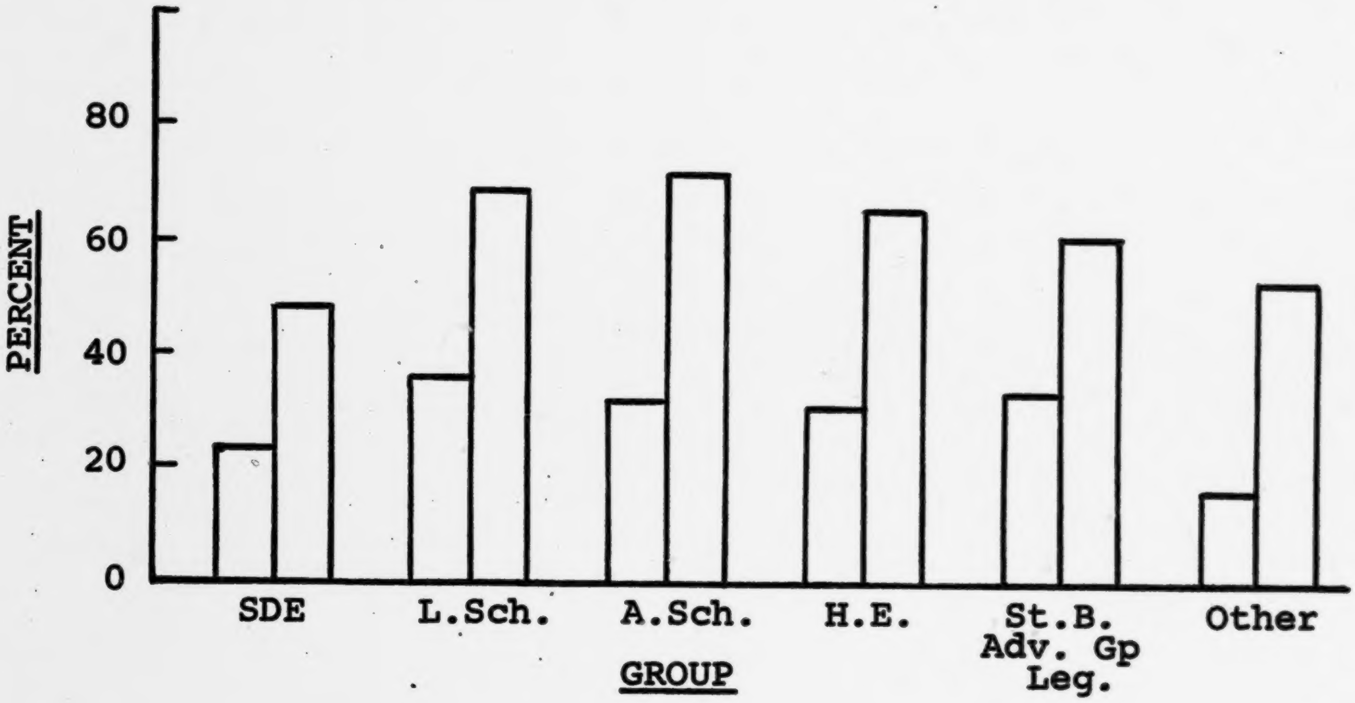
Developing programs?



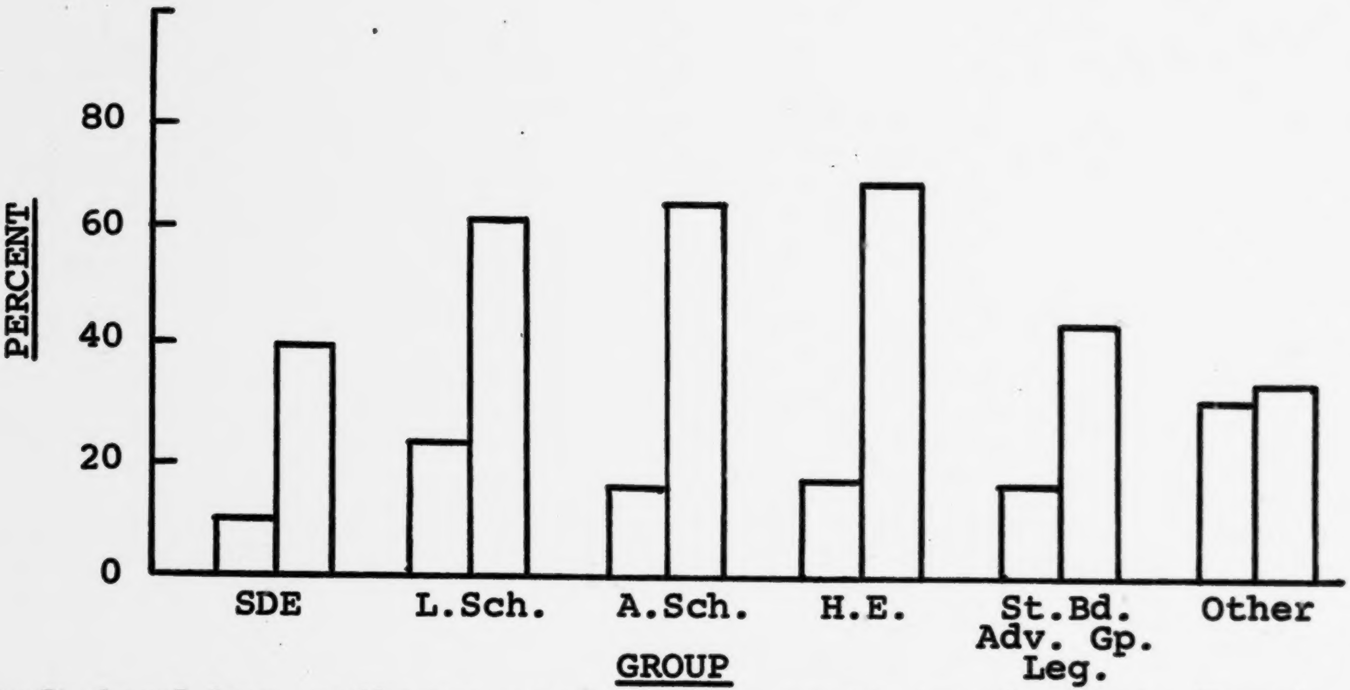
Left-hand bar reflects perceived present involvement (Does)
Right-hand bar reflects expected (ideal) involvement (Should)

How Frequently DOES and How Frequently SHOULD the Division Involve Persons Like You in:

Disseminating information?



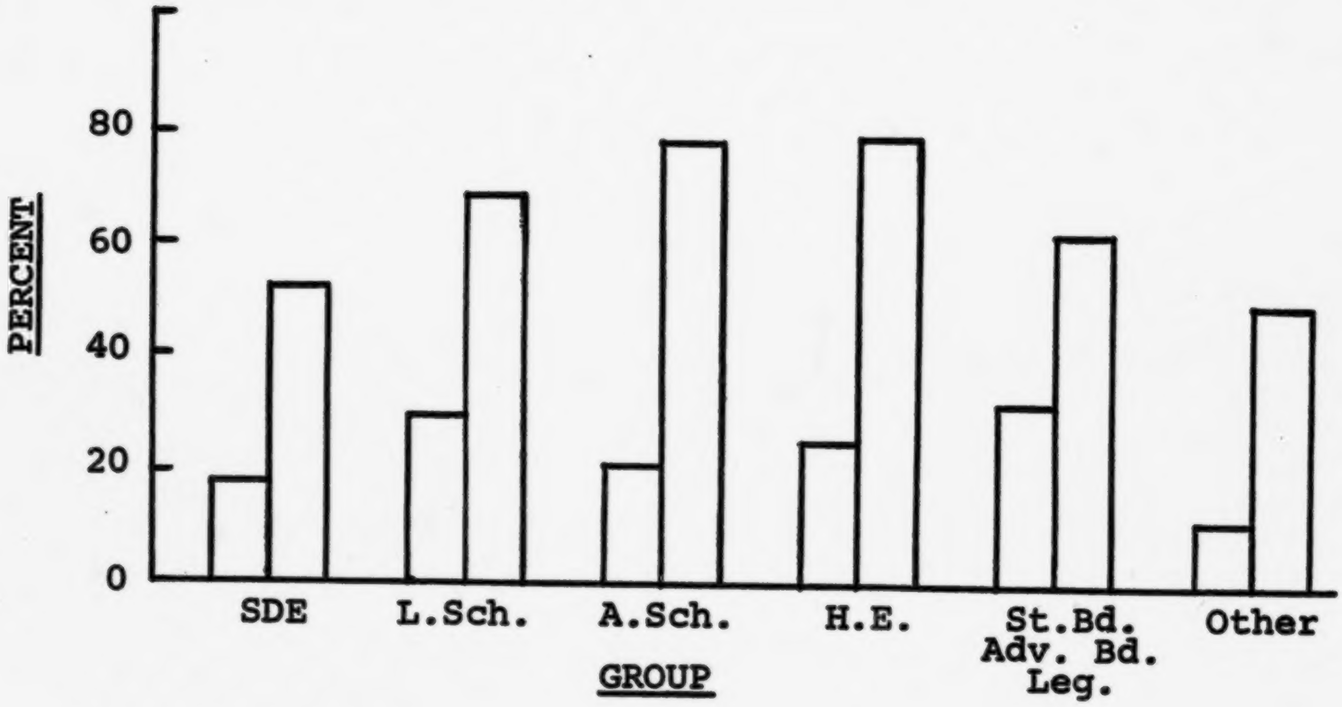
Field-testing new methods, materials, etc.?



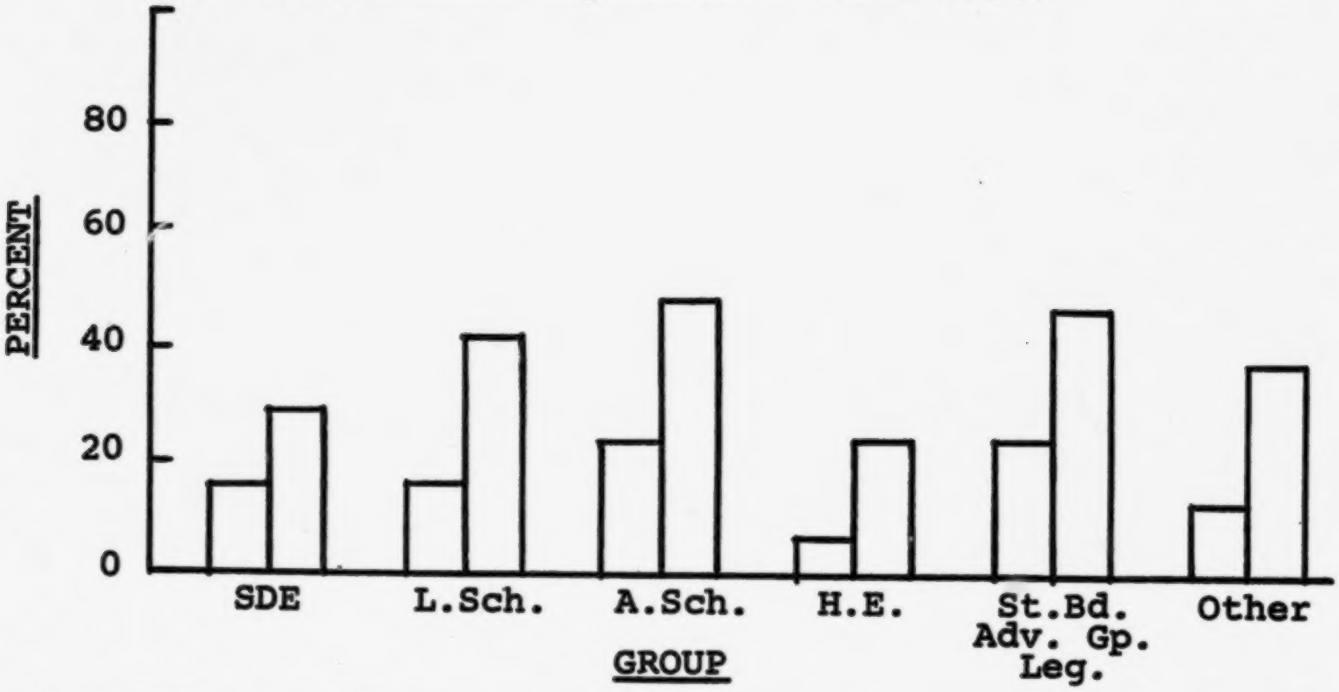
Left-hand bar reflects perceived present involvement (Does)
Right-hand bar reflects expected (ideal) involvement (Should)

How Frequently DOES and How Frequently SHOULD the Division Involve Persons Like You in:

Implementing new ideas and programs?



Appearing before legislative committees?

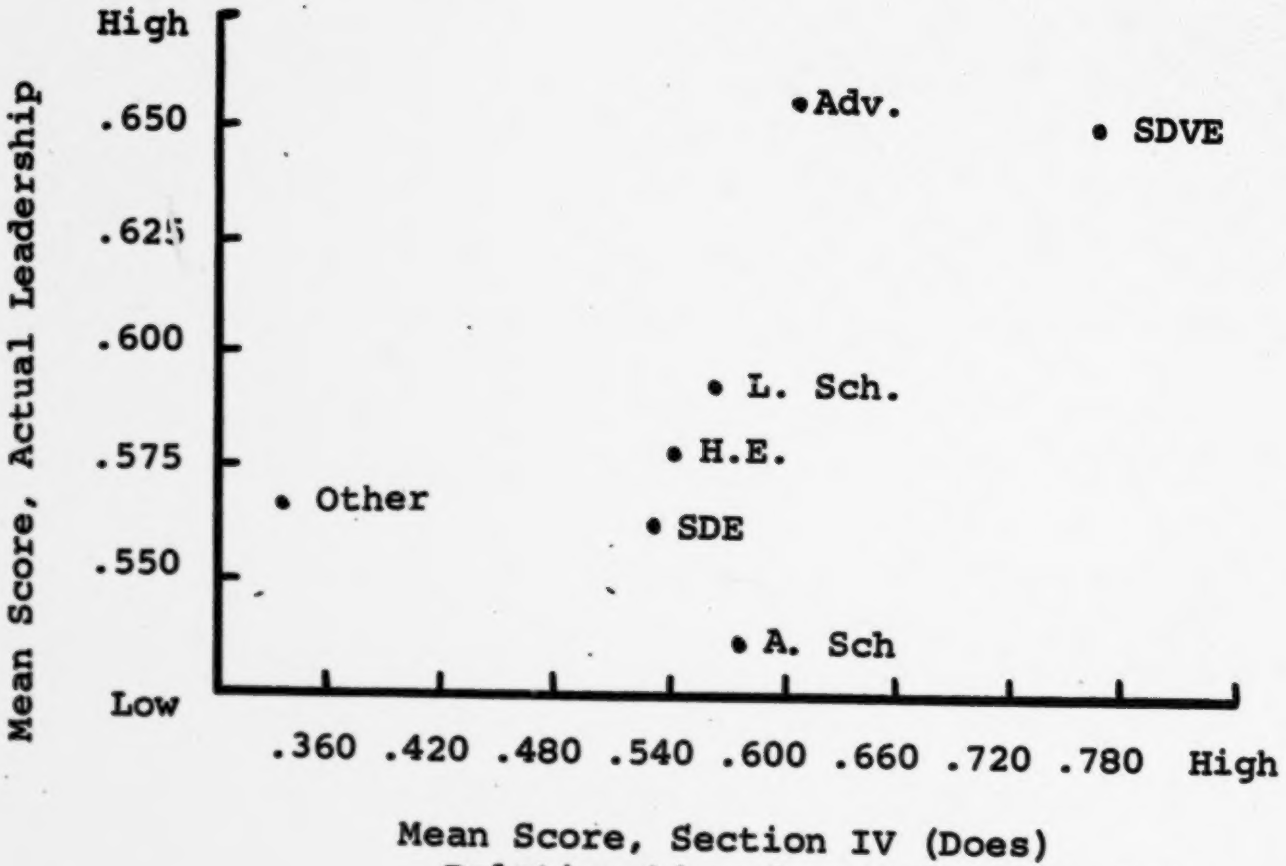


Left-hand bar reflects perceived present involvement (Does)
Right-hand bar reflects expected (ideal) involvement (Should)

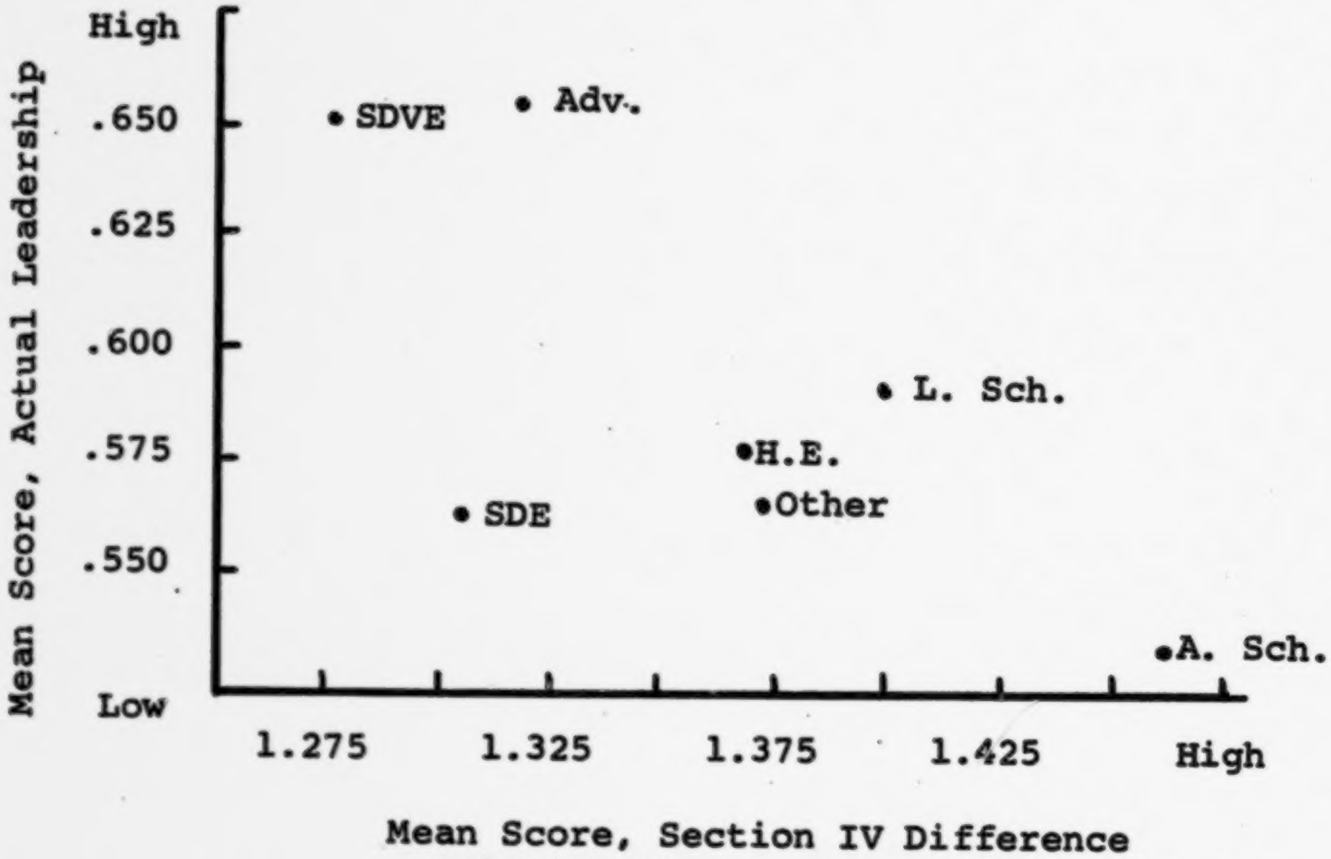
H. RELATIONSHIPS OF SELECTED RESPONDENT GROUP MEAN SCORES ON TWO ITEM CLUSTERS

The following scatter plots portray relationships of group mean scores on two clusters for both sample groups (N=905, N=878).

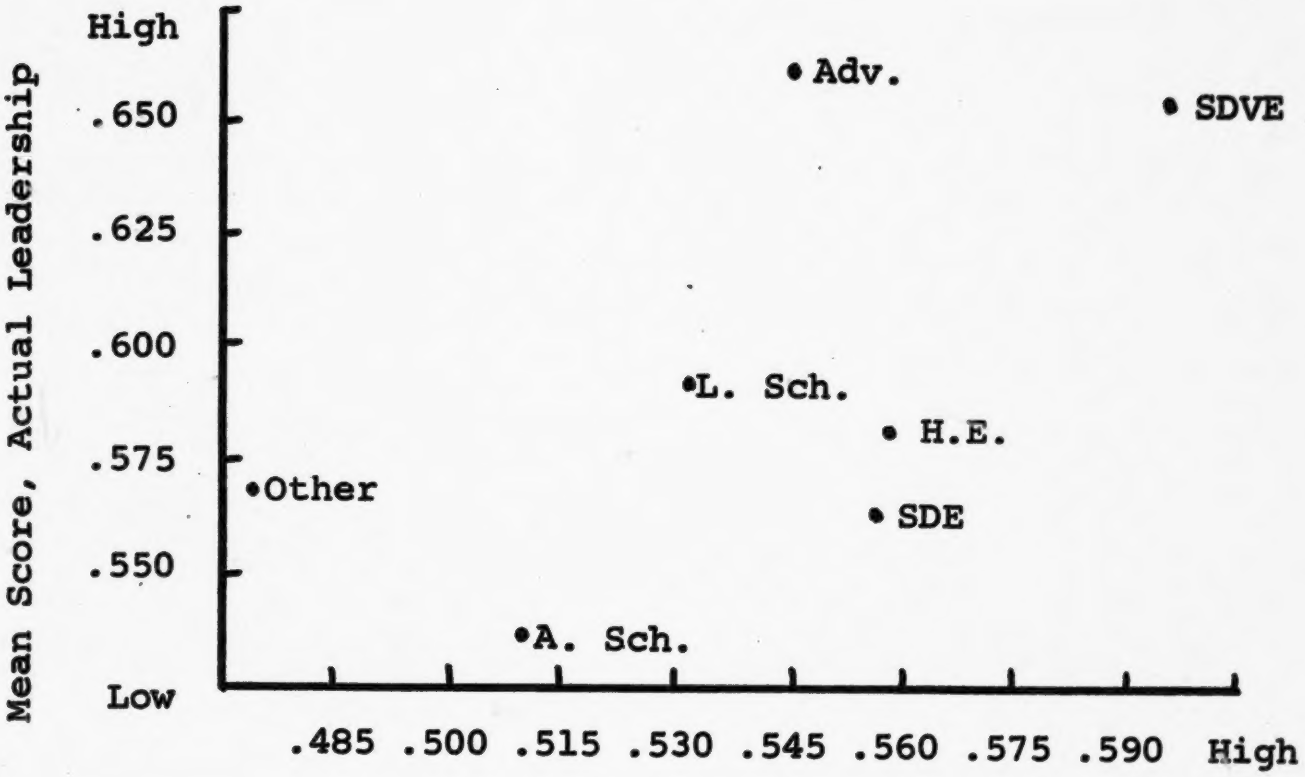
Group Abbreviations:		N 905	N 878
SDVE	State Division of Vocational Education	205	189
SDE	State Department of Education (excluding SDVE)	72	83
L. Sch.	Local Schools	226	189
H.E.	Higher Education	114	115
A. Sch.	Area Schools (including Junior or Community Colleges)	70	48
Adv. Gp.	Combination of: State Board Members, State-Level Vocational Education Advisory Group Members, and State Legislators	72	128
Other	Other Respondents (Business, Labor, Agriculture, etc.)	146	126



Relationship of actual leadership scores to section IV (does) scores.

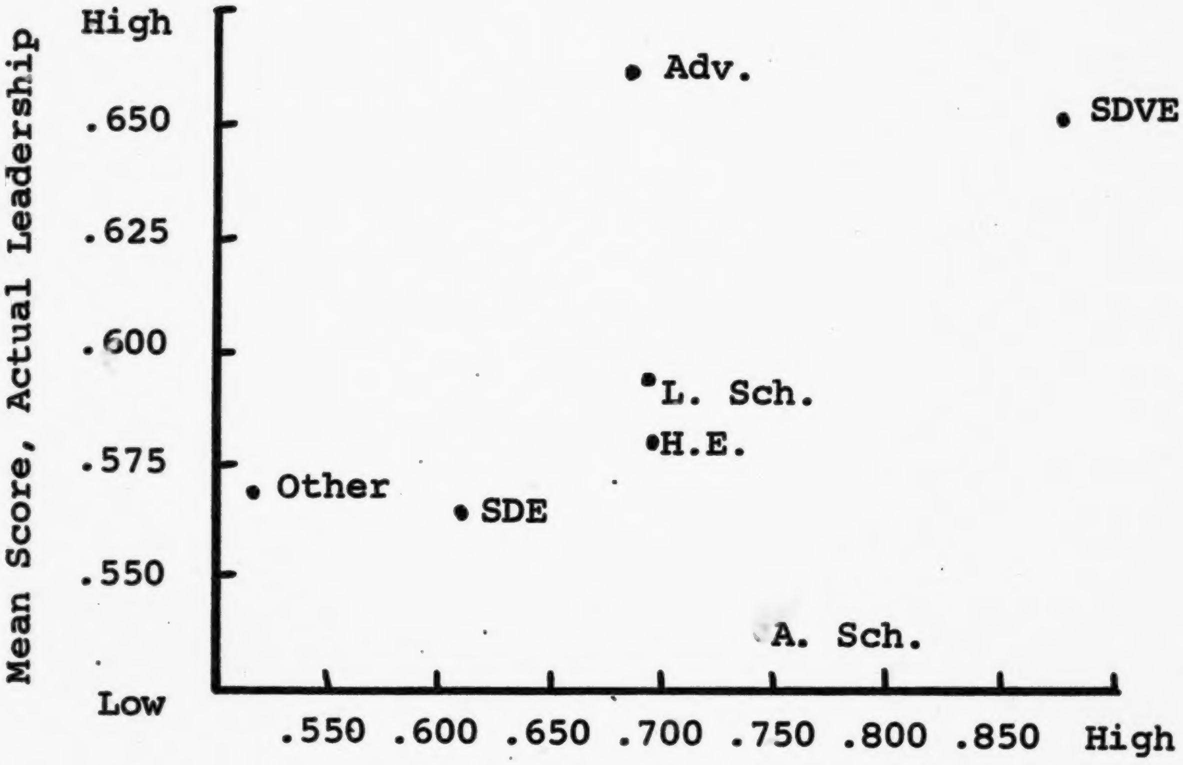


Relationship of actual leadership scores to section IV difference scores.



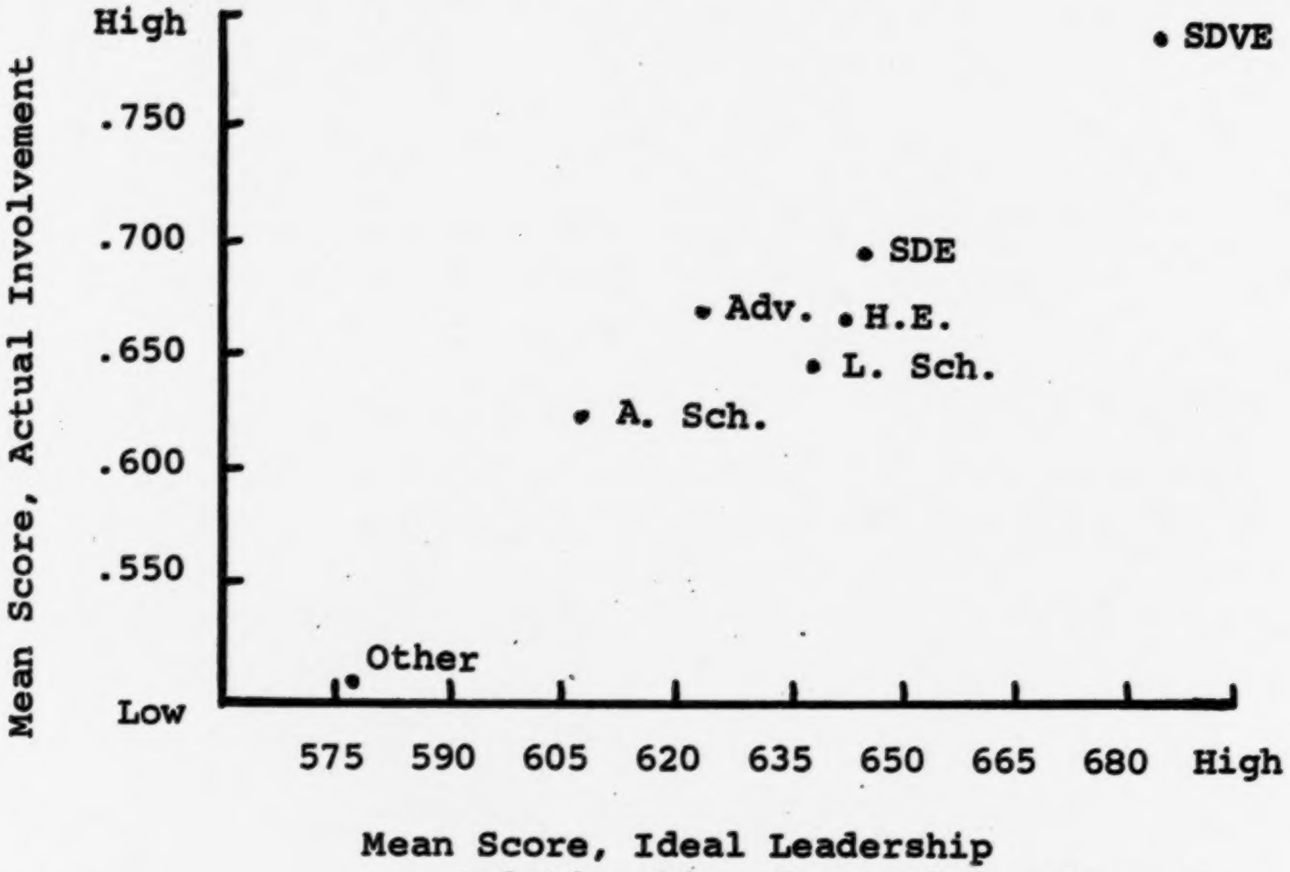
Mean Score, Actual Regulation

Relationship of actual leadership scores to actual regulation scores.

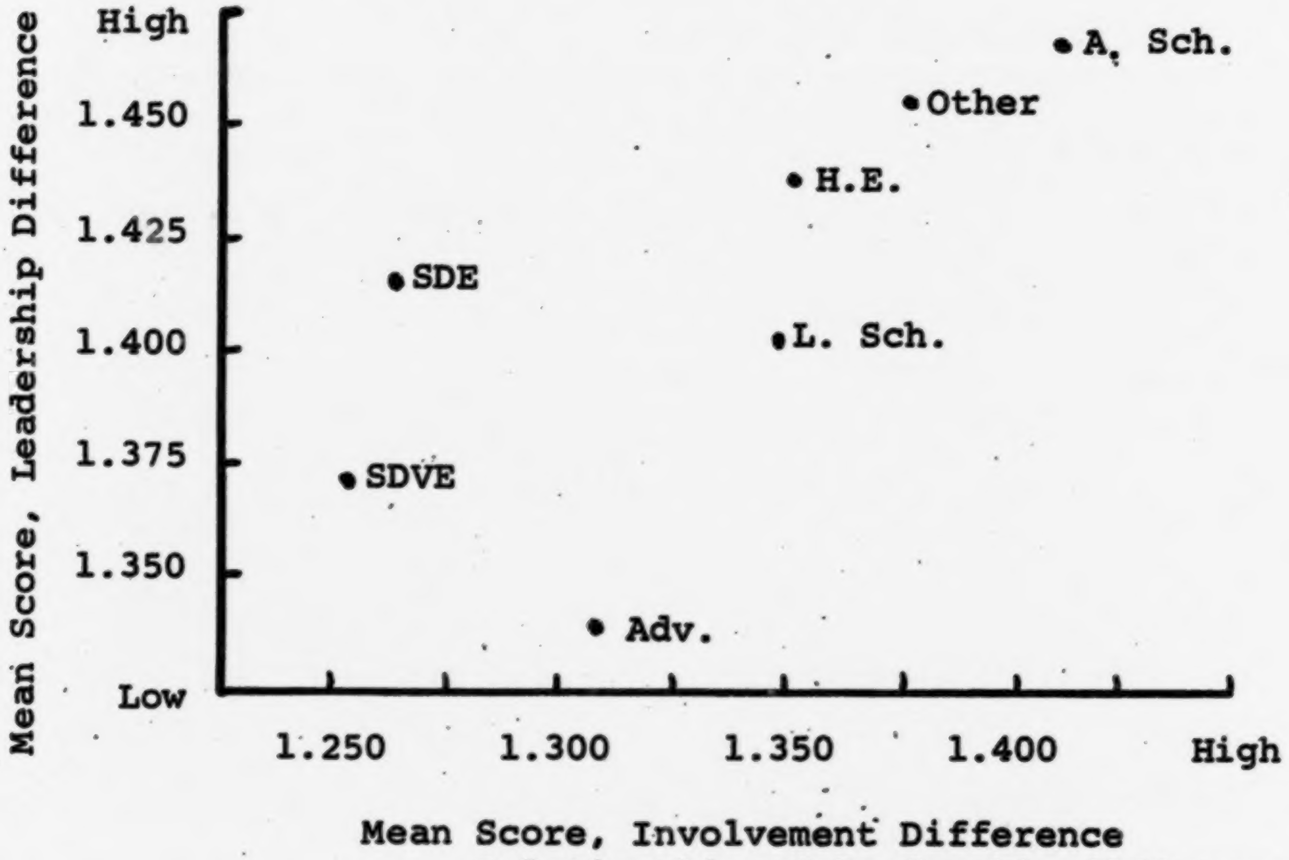


Mean Score, Section IV (Should)

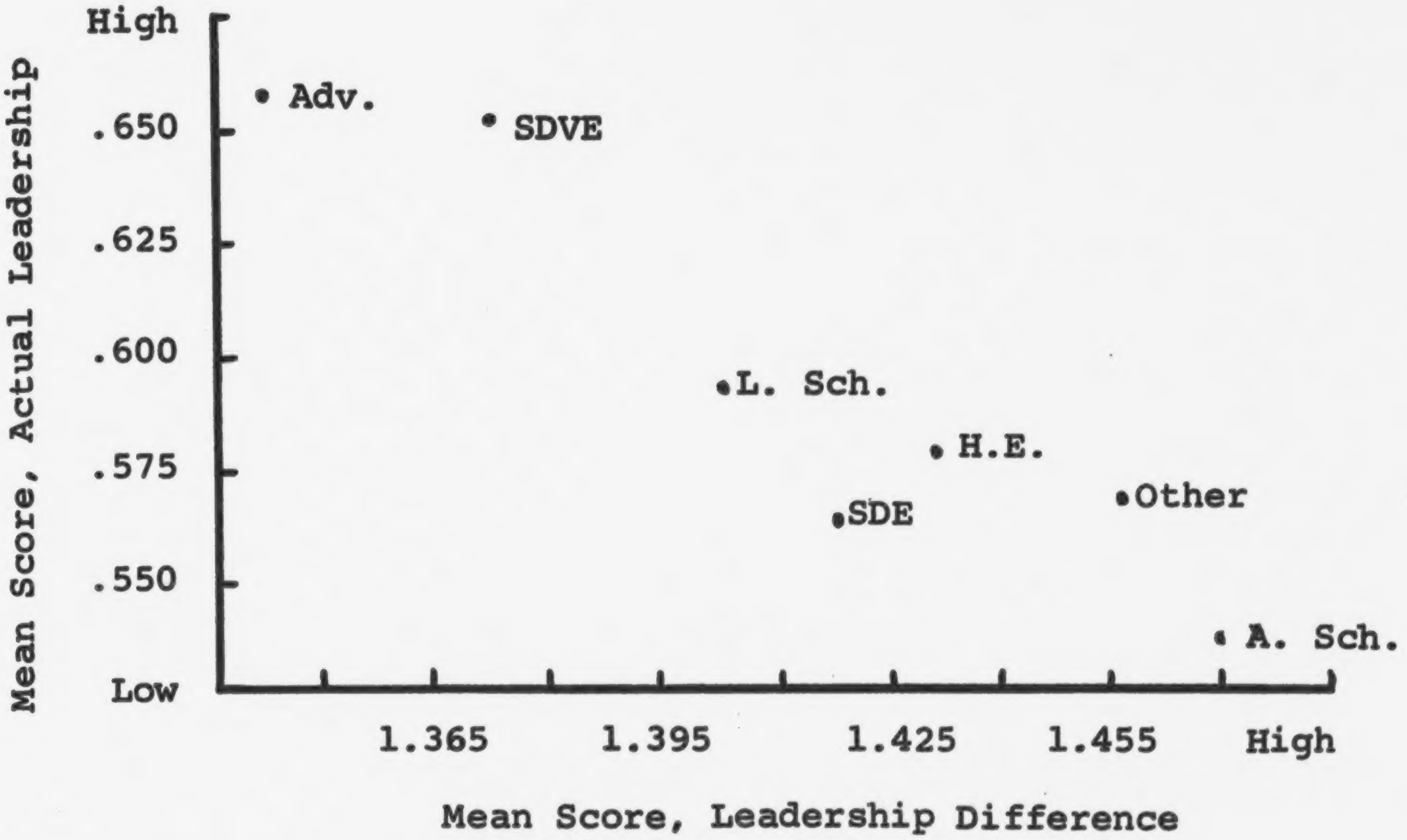
Relationship of actual leadership scores to section IV (should) scores.



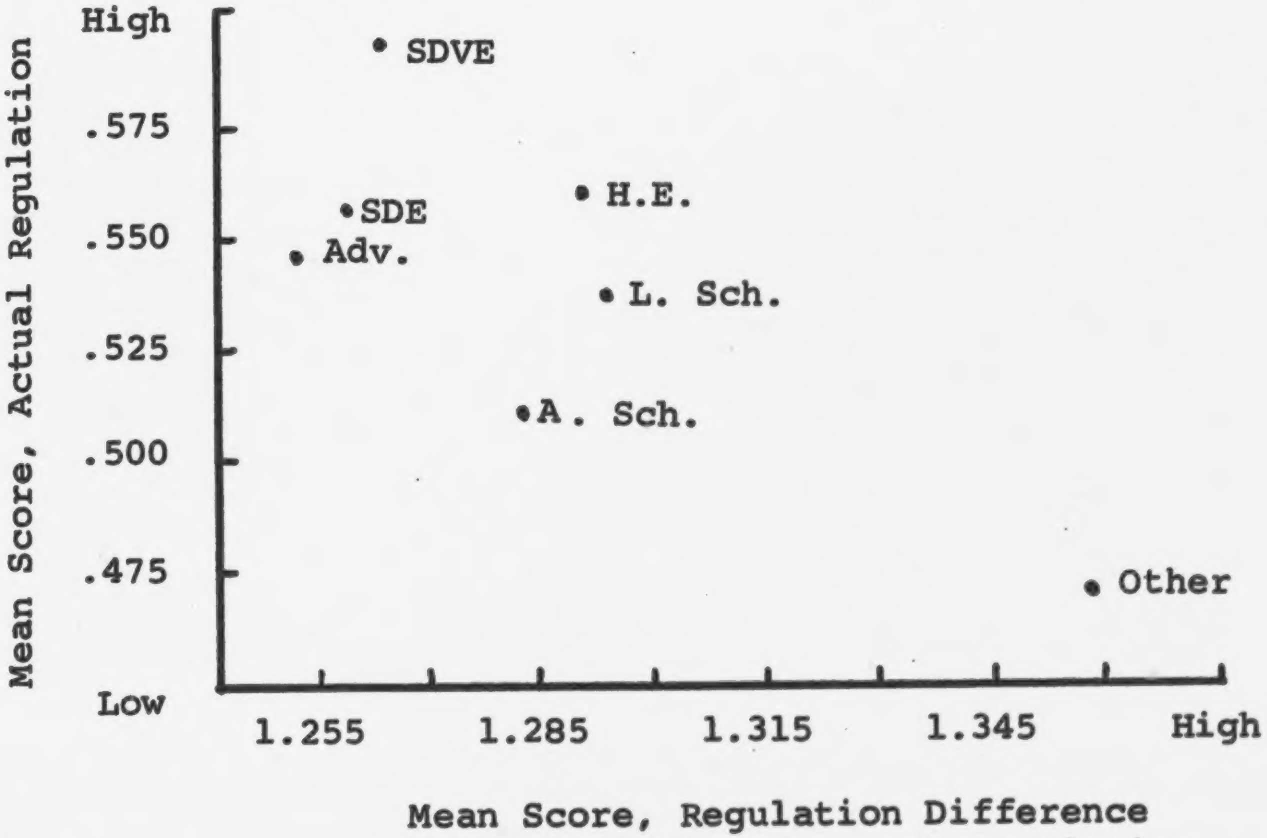
Relationship of actual involvement scores to ideal leadership scores.



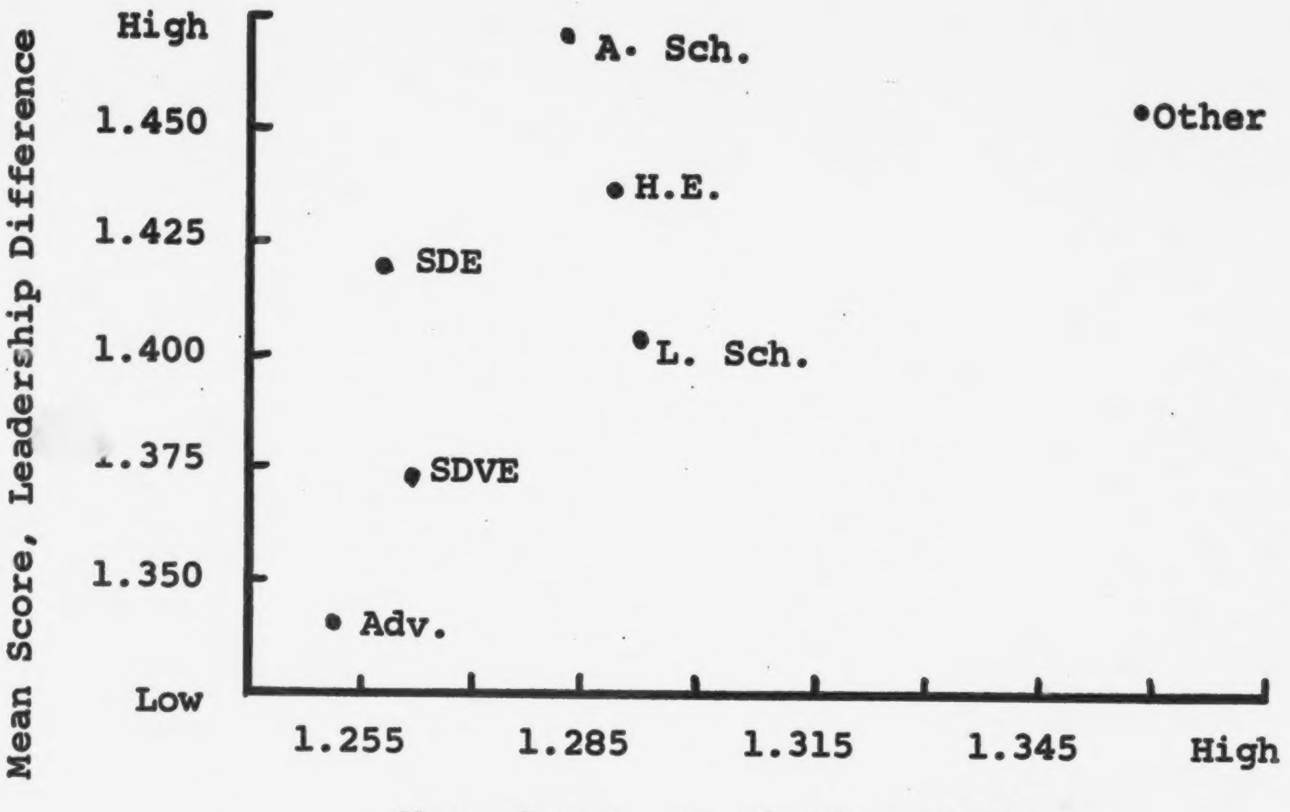
Relationship of leadership difference scores to involvement difference scores.



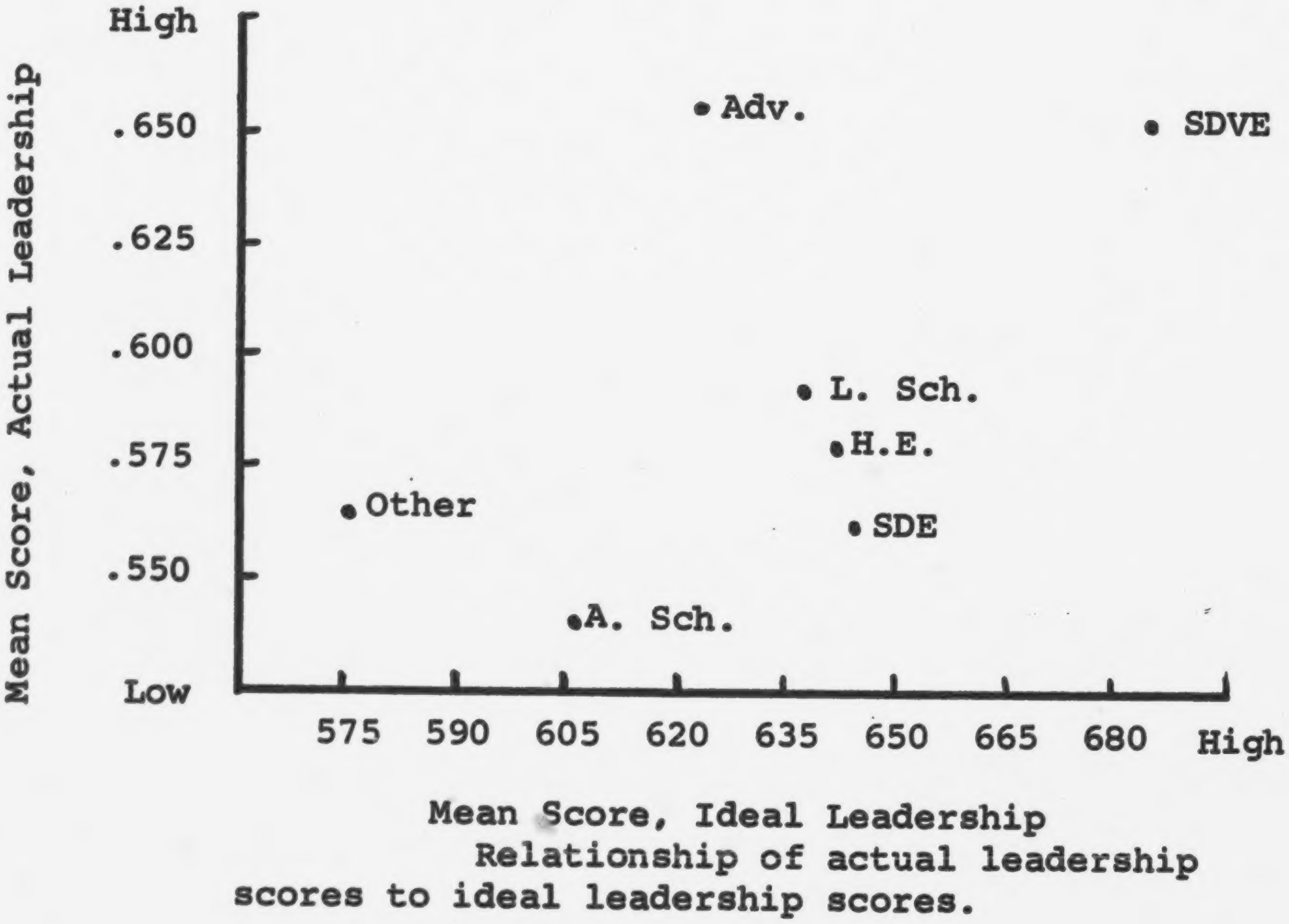
Relationship of actual leadership scores to regulation difference scores.



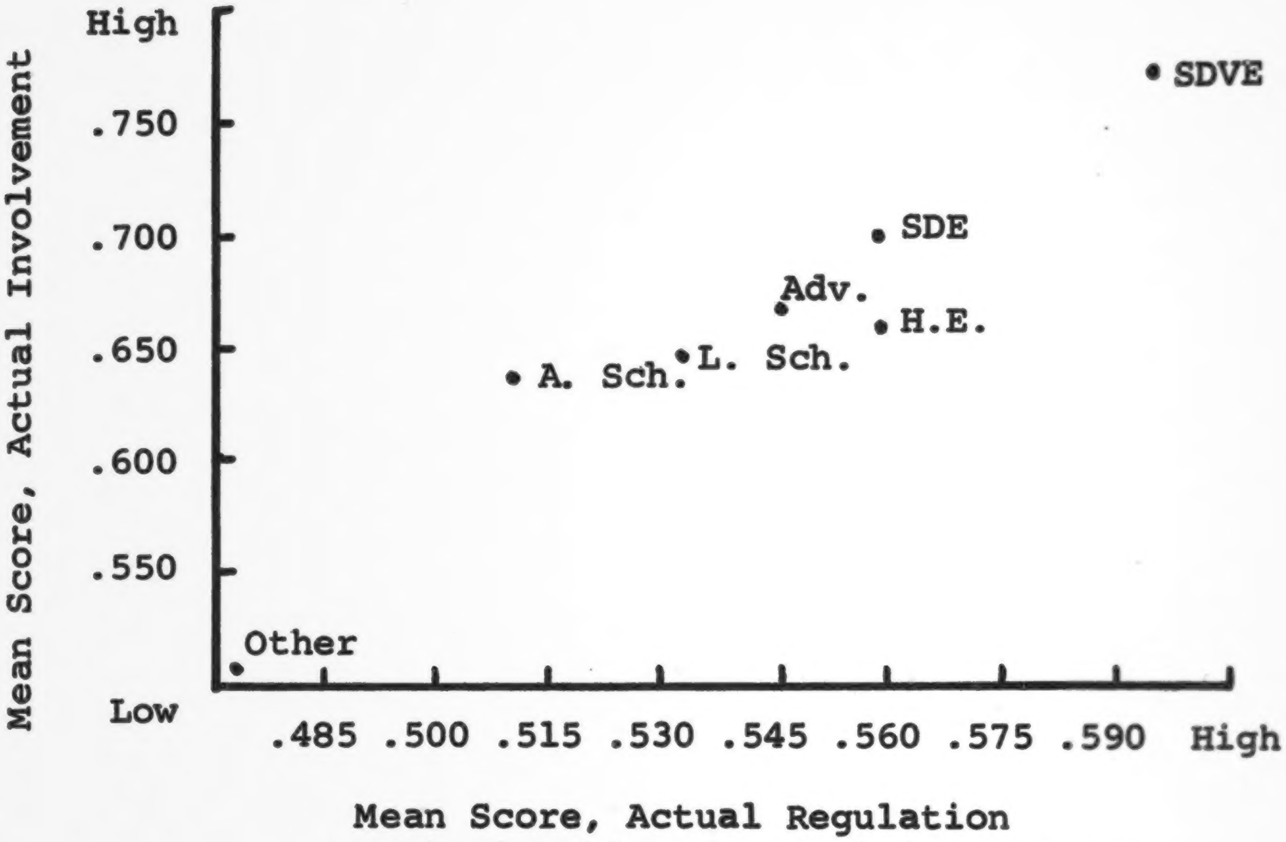
Relationship of actual regulation scores to regulation difference scores.



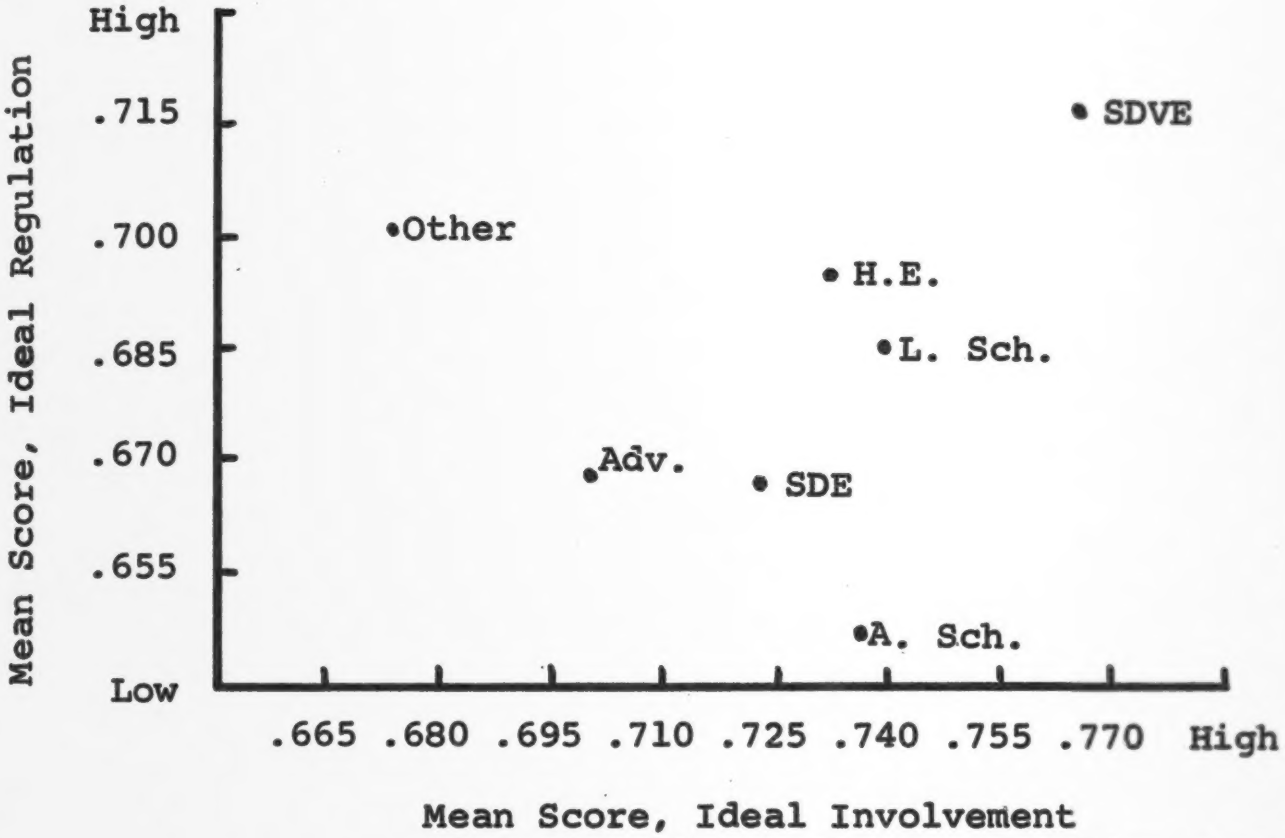
Relationship of leadership difference scores to regulation difference scores.



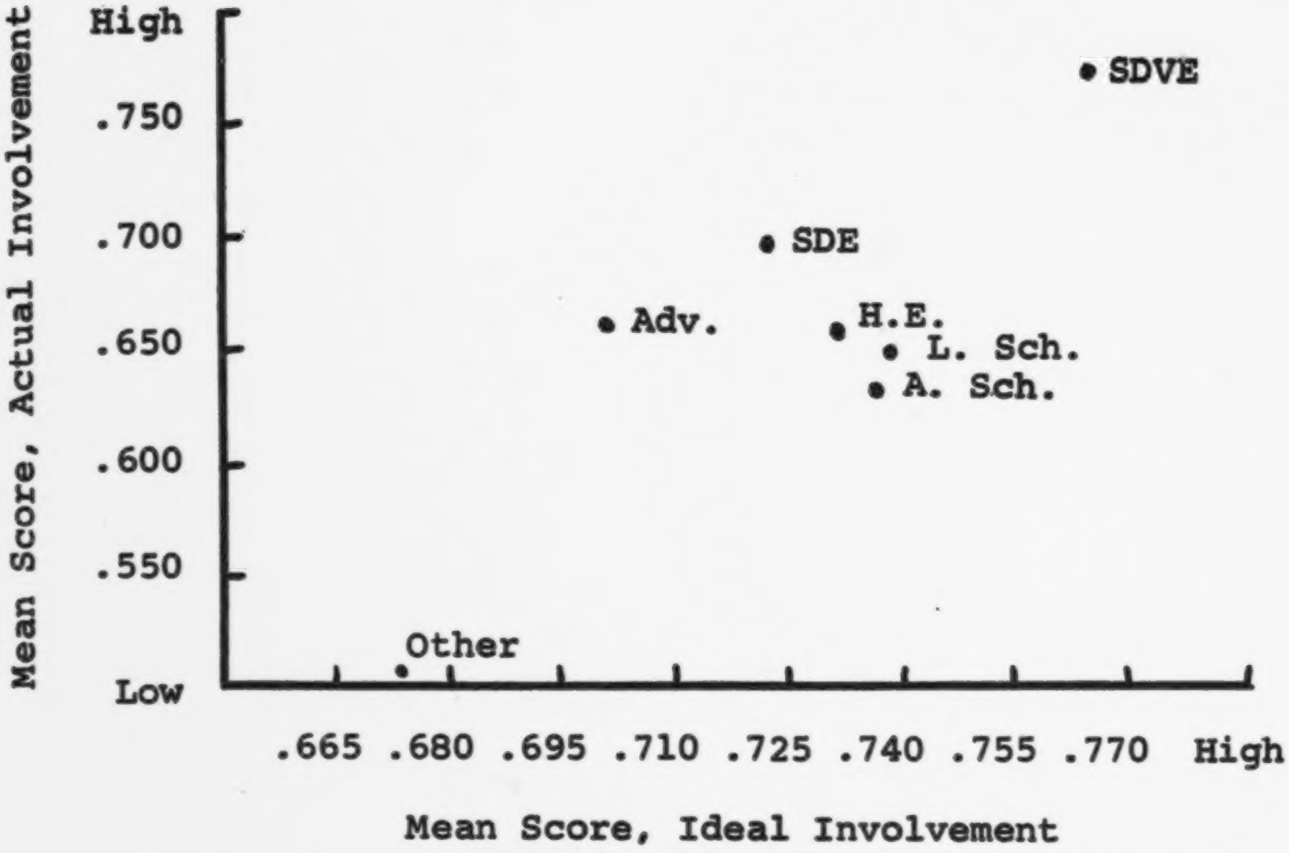
Relationship of actual leadership scores to ideal leadership scores.



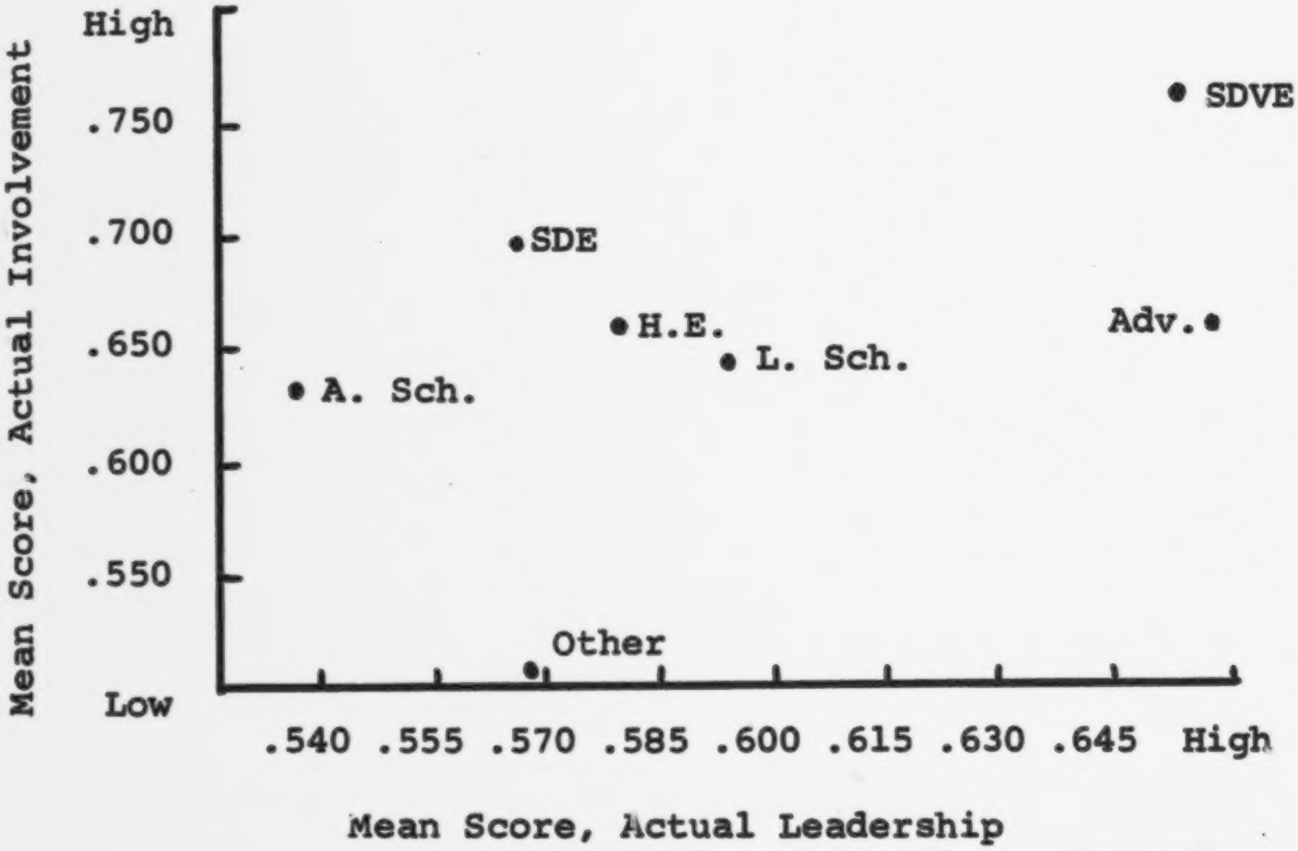
Relationship of actual involvement scores to actual regulation scores.



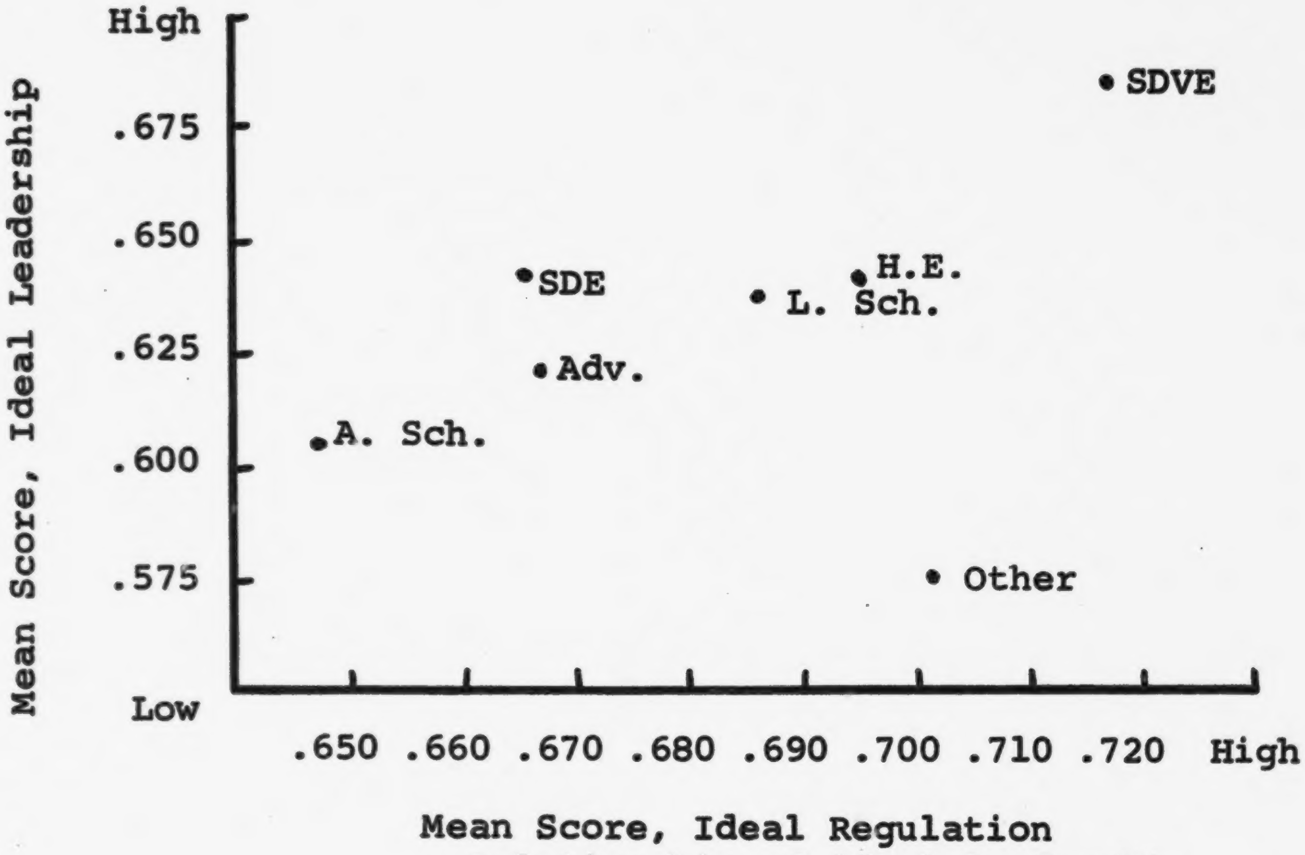
Relationship of ideal regulation scores to ideal involvement scores.



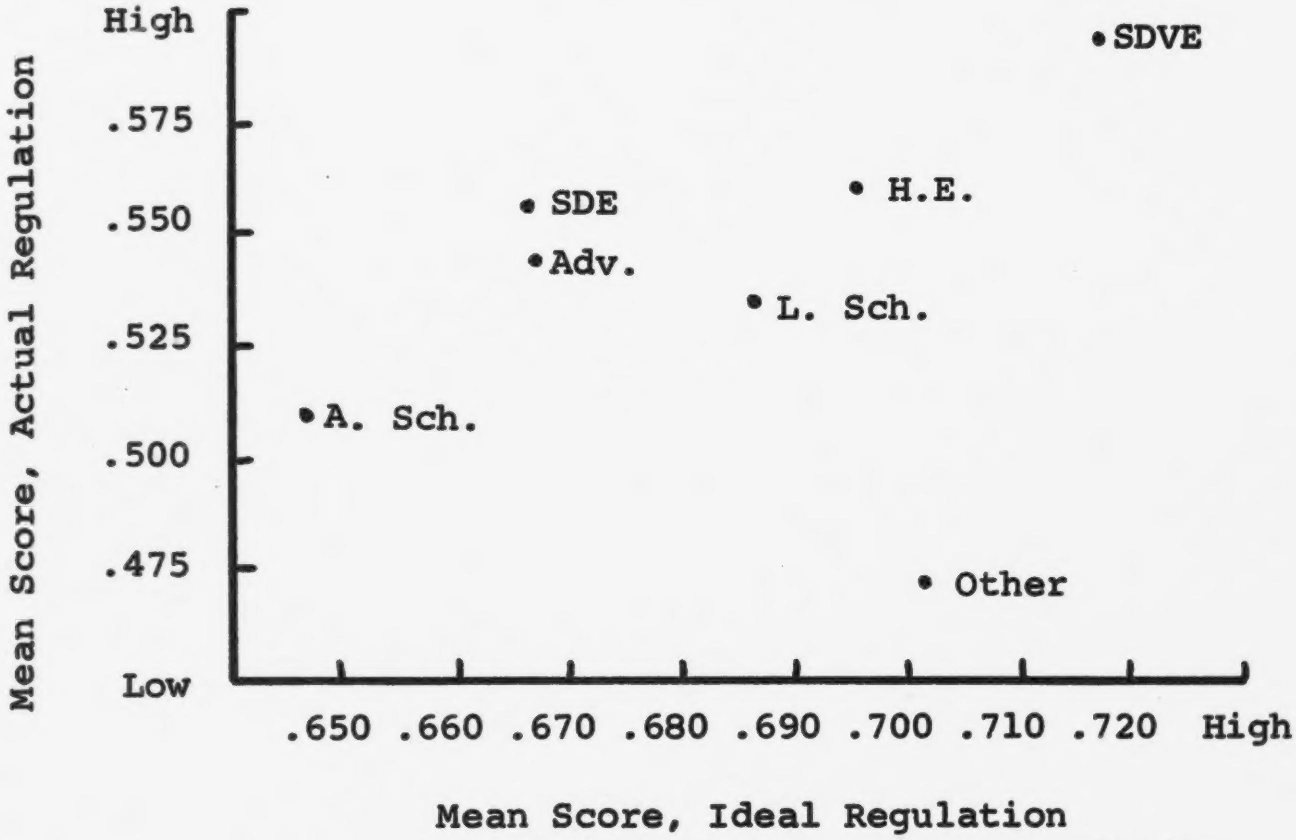
Relationship of actual involvement scores to ideal involvement scores.



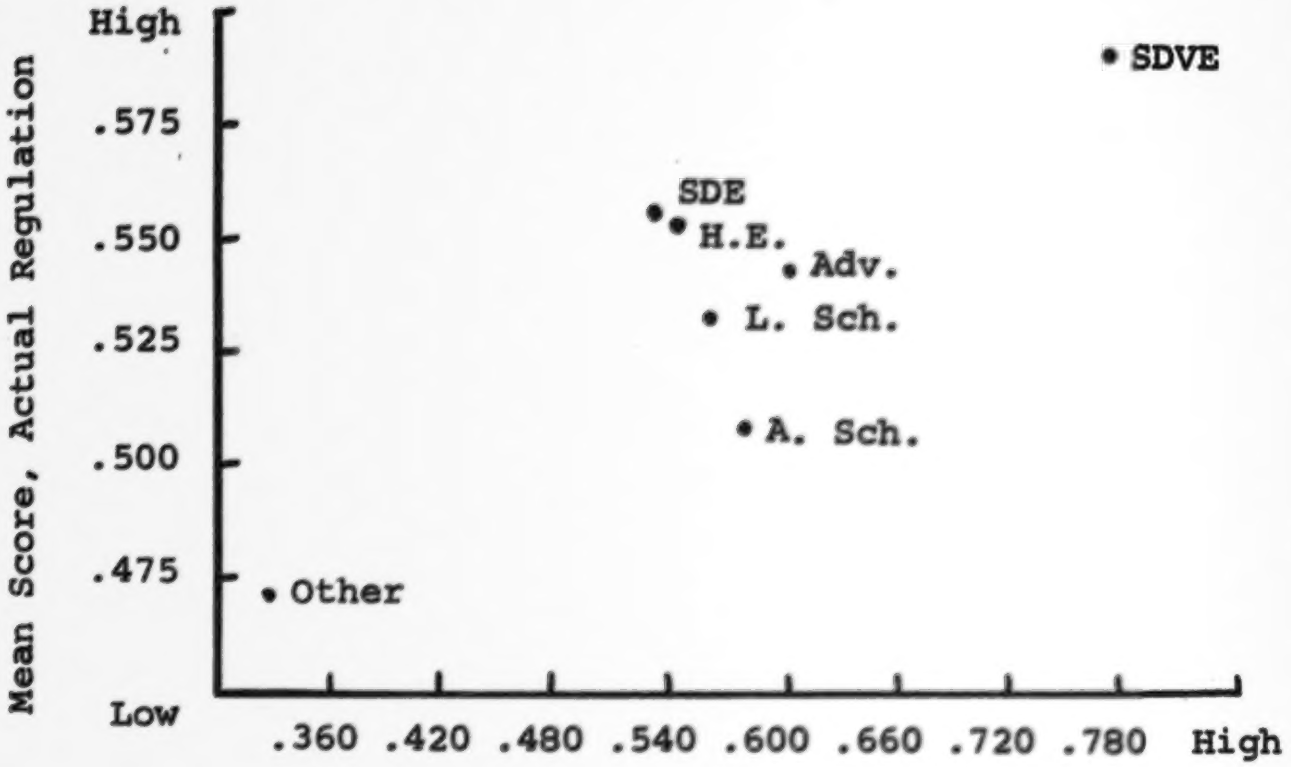
Relationship of actual involvement scores to actual leadership scores



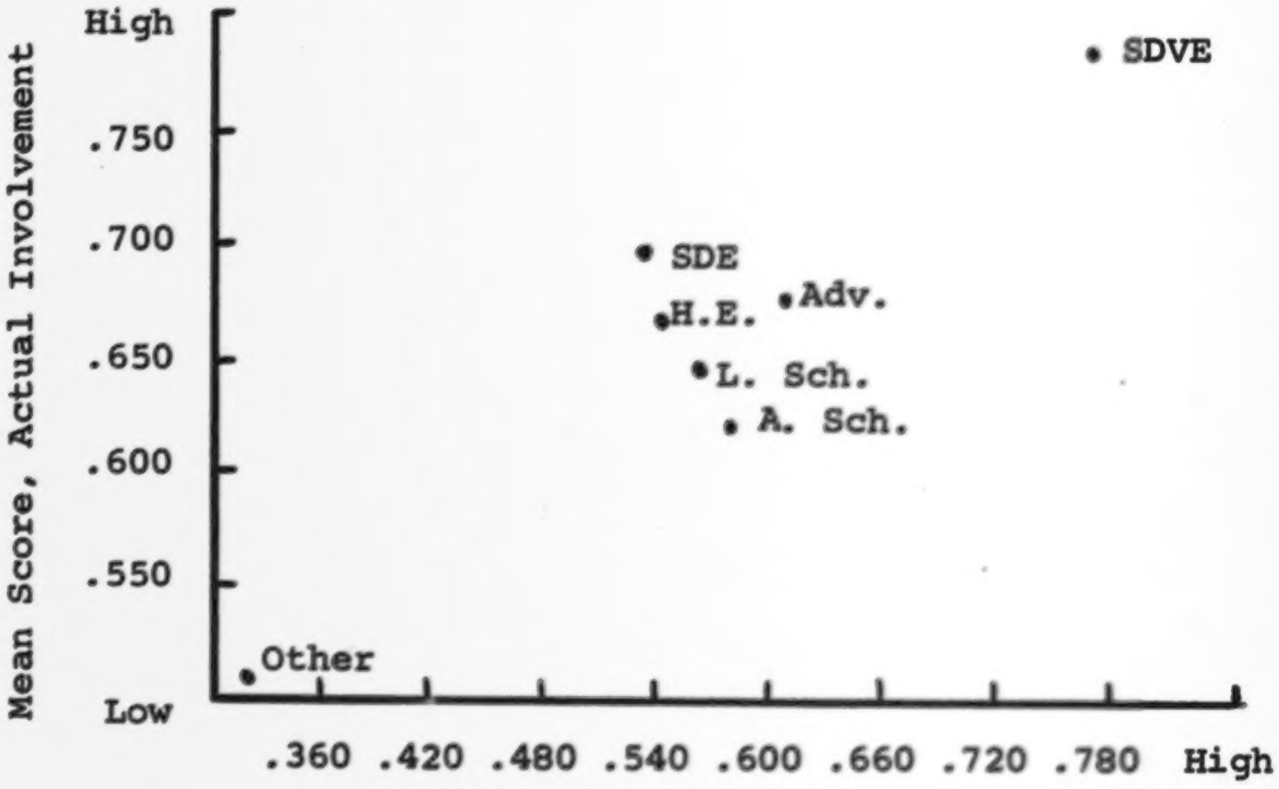
Relationship of ideal leadership scores to ideal regulation scores.



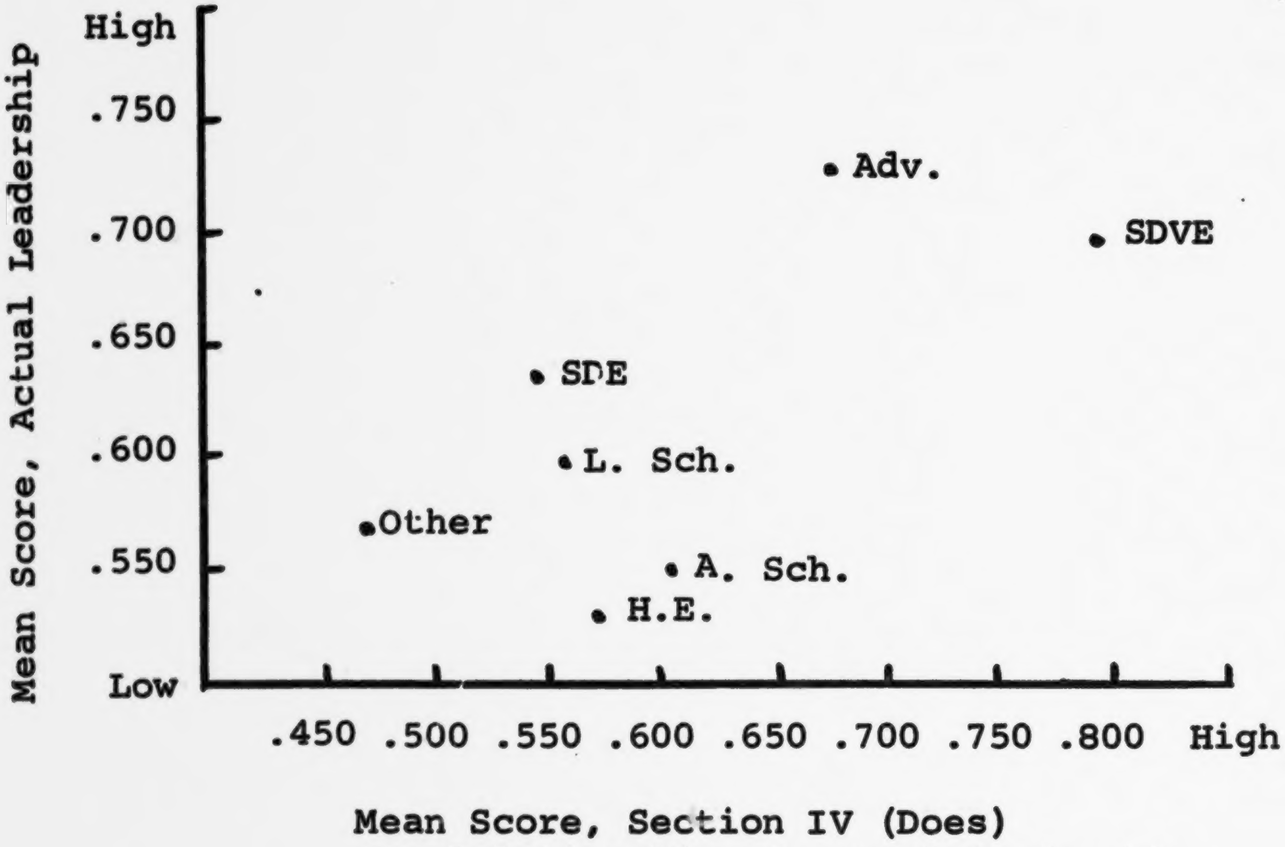
Relationship of actual regulation scores to ideal regulation scores.



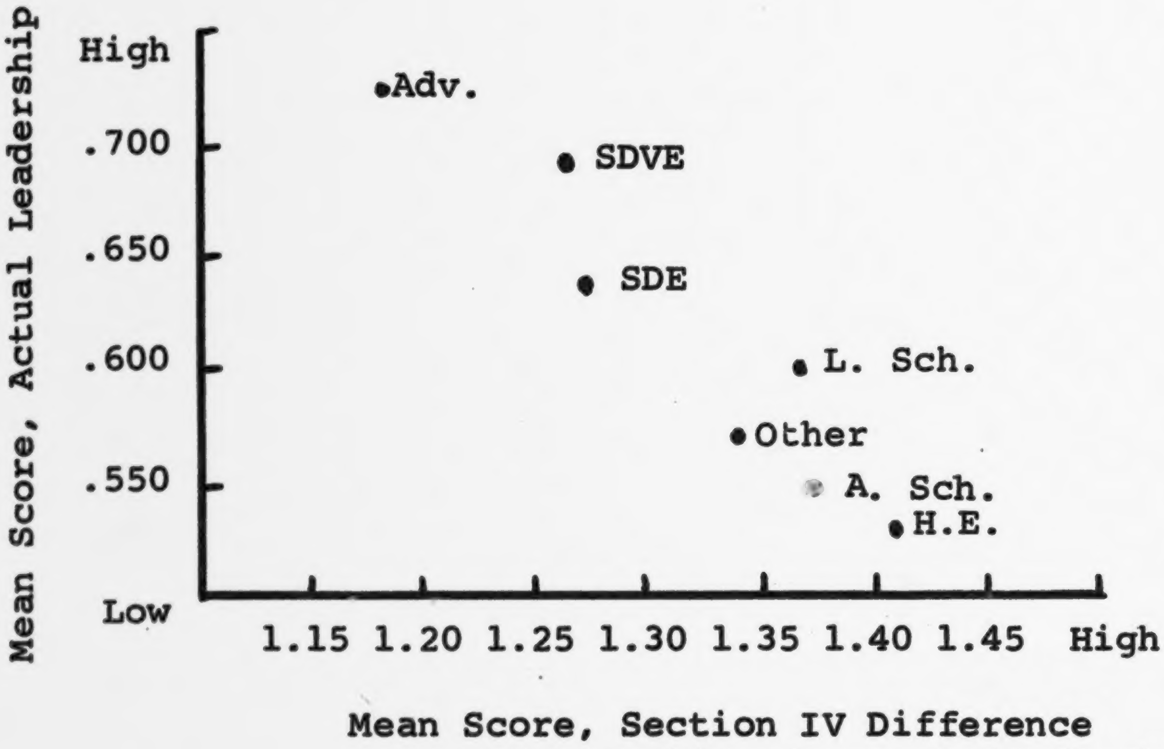
Mean Score, Section IV (Does)
Relationship of actual regulation scores to section IV (does) scores.



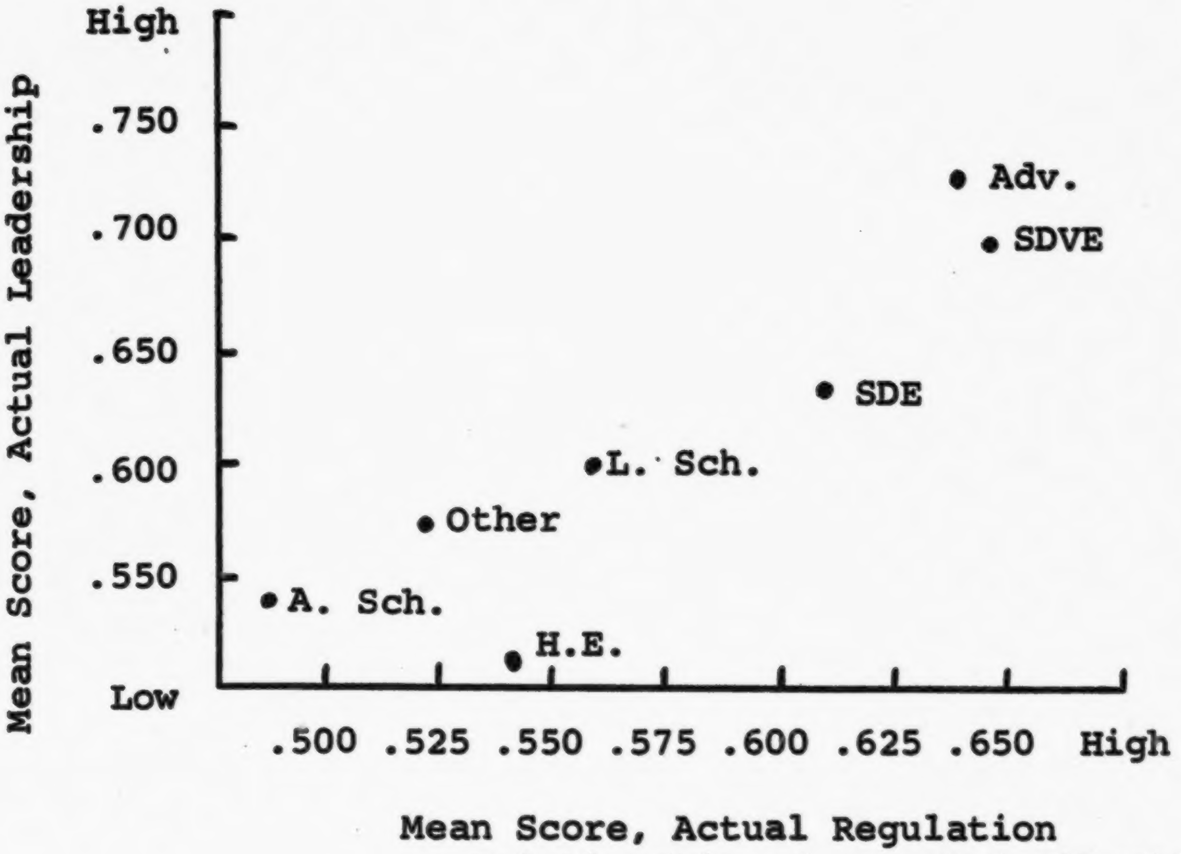
Mean Score, Section IV (Does)
Relationship of actual involvement scores to section IV (does) scores.



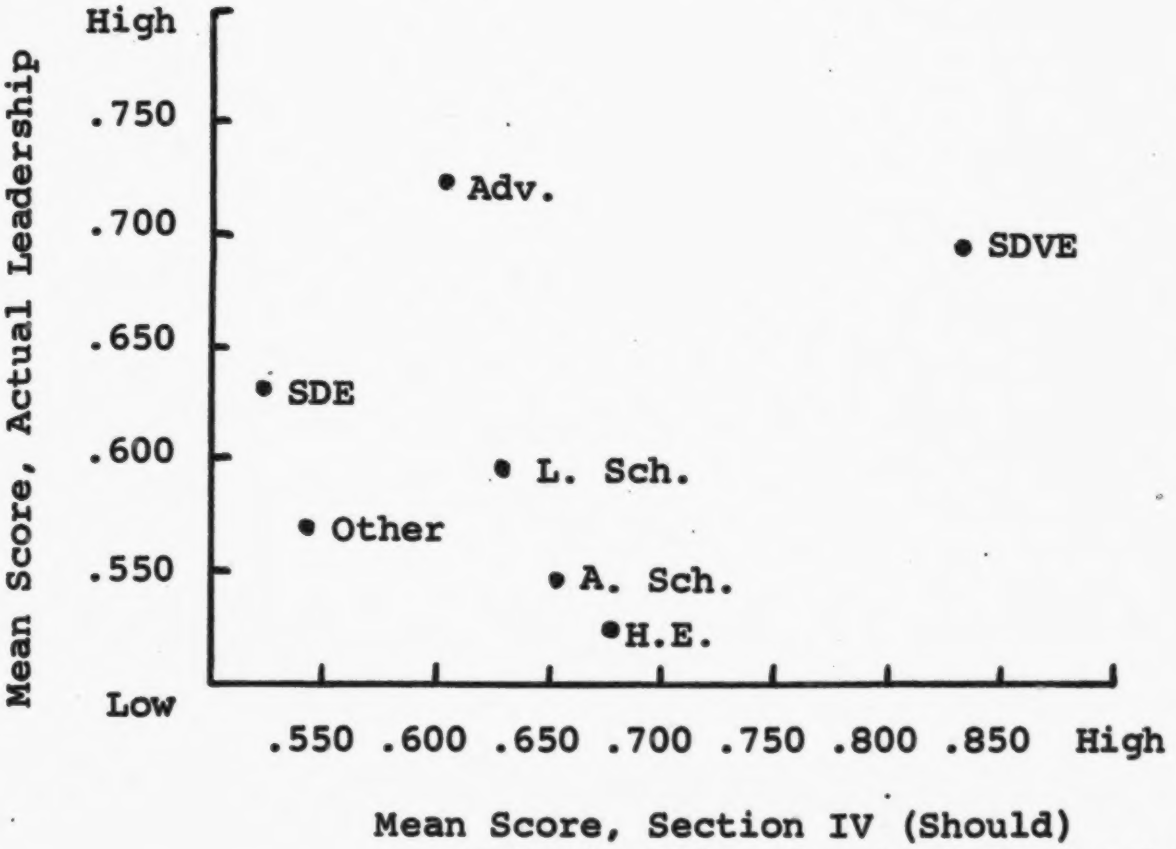
Relationship of actual leadership scores to section IV (does) scores.



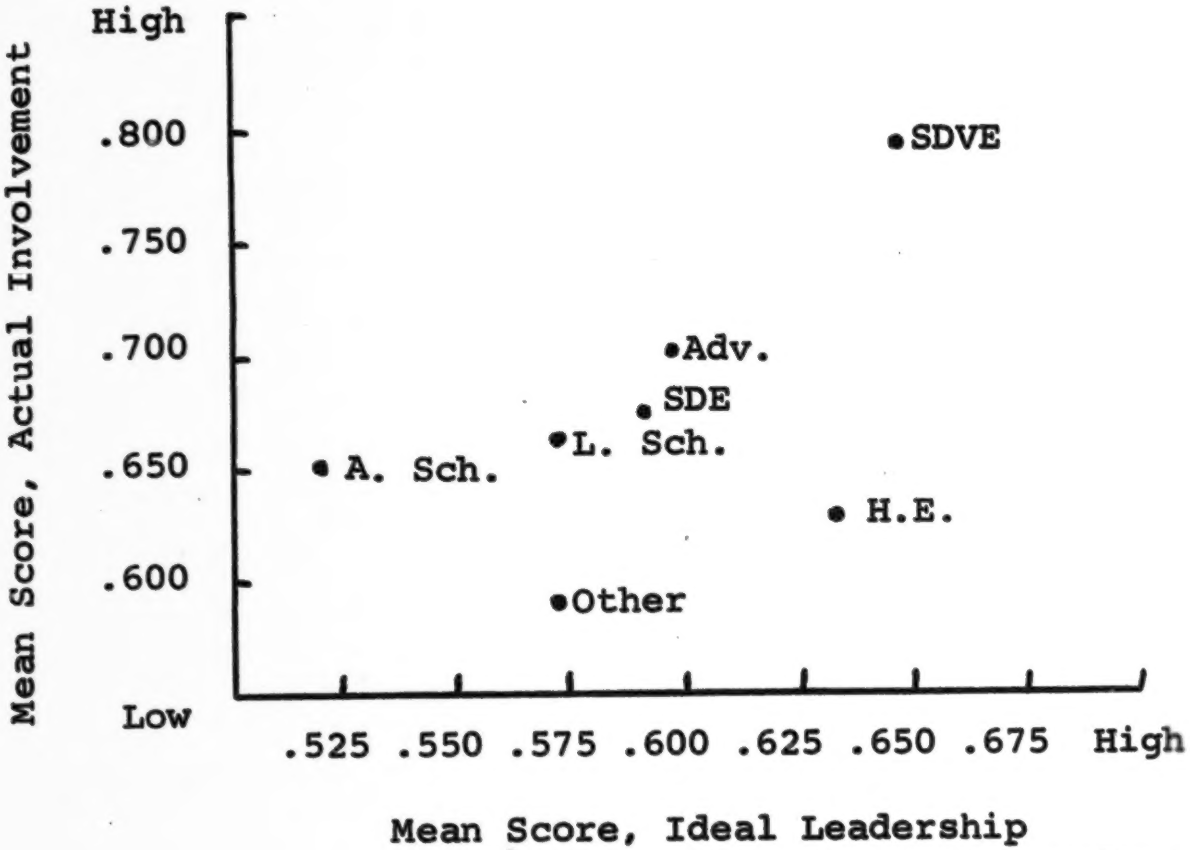
Relationship of actual leadership scores to section IV difference scores.



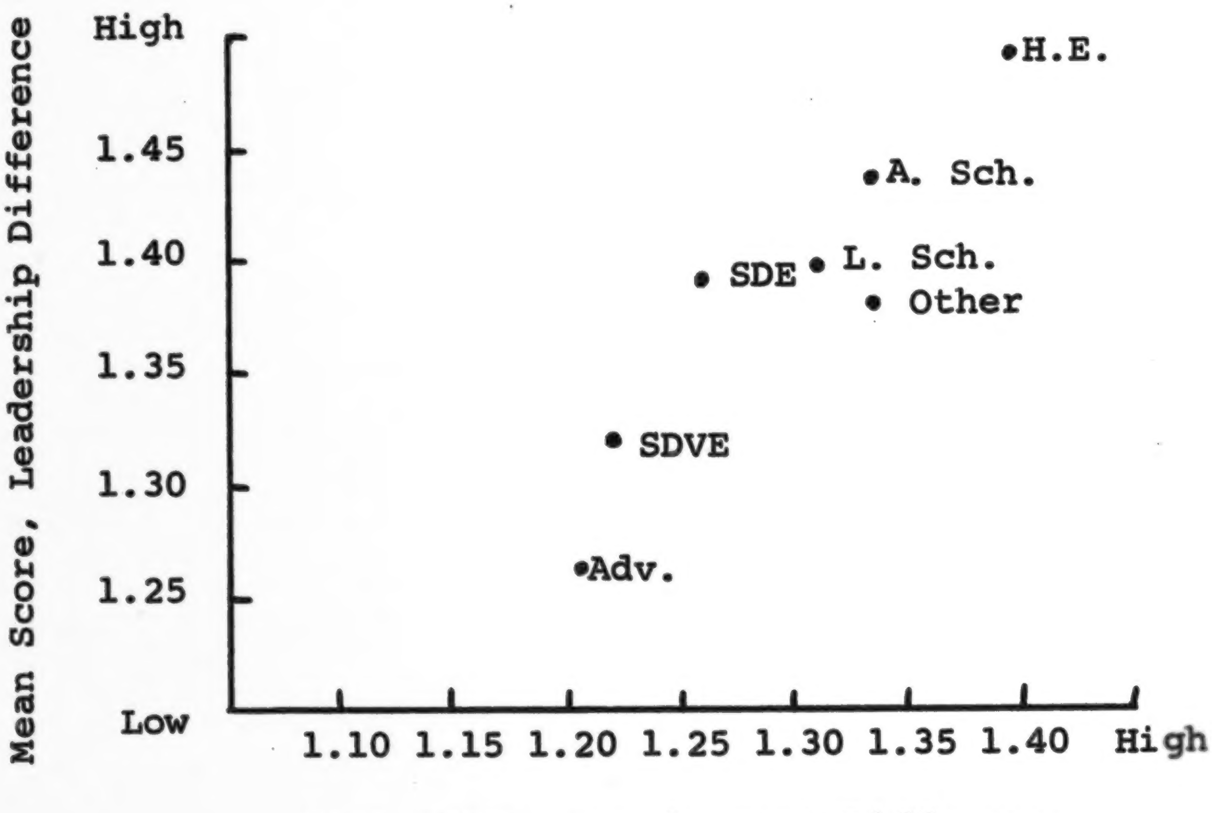
Relationship of actual leadership scores to actual regulation scores.



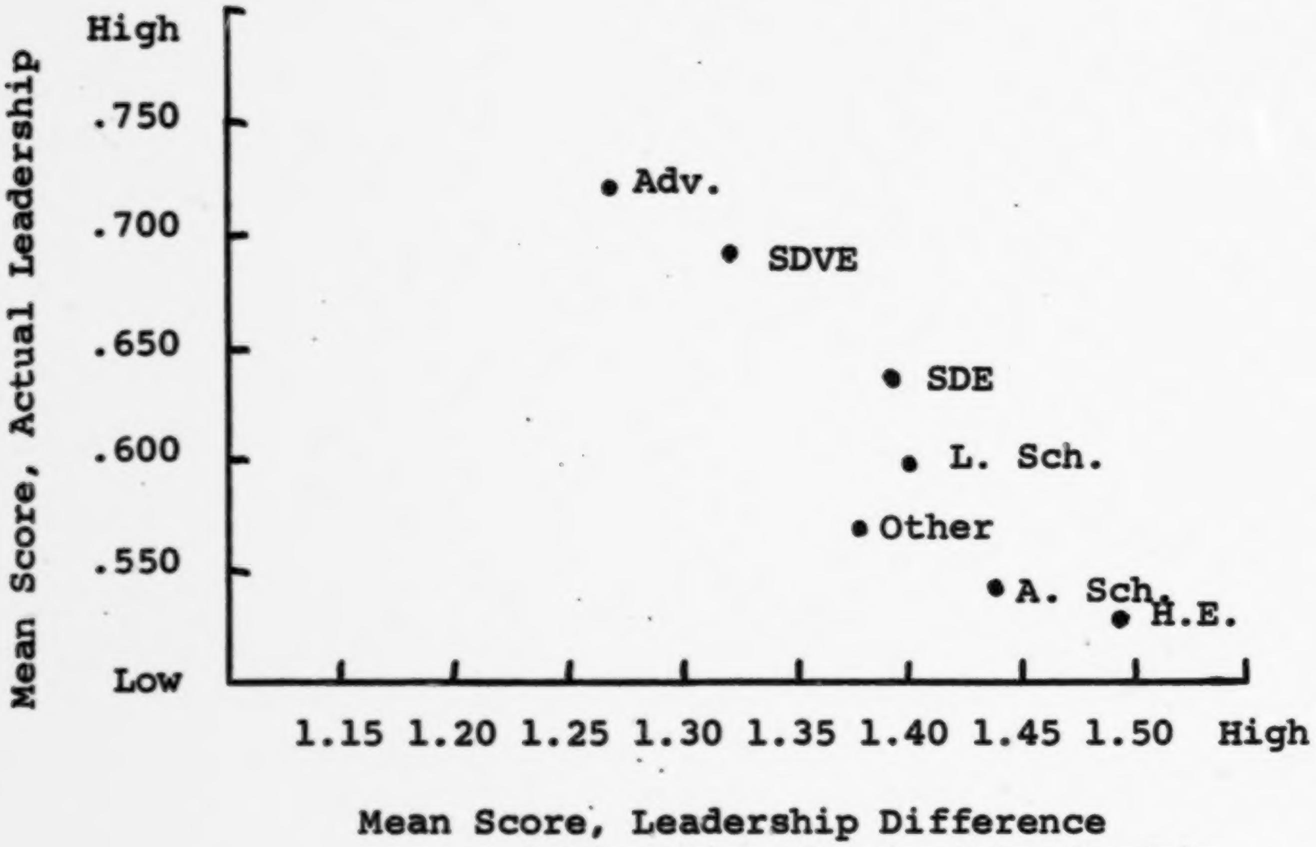
Relationship of actual leadership scores to section IV (should) scores.



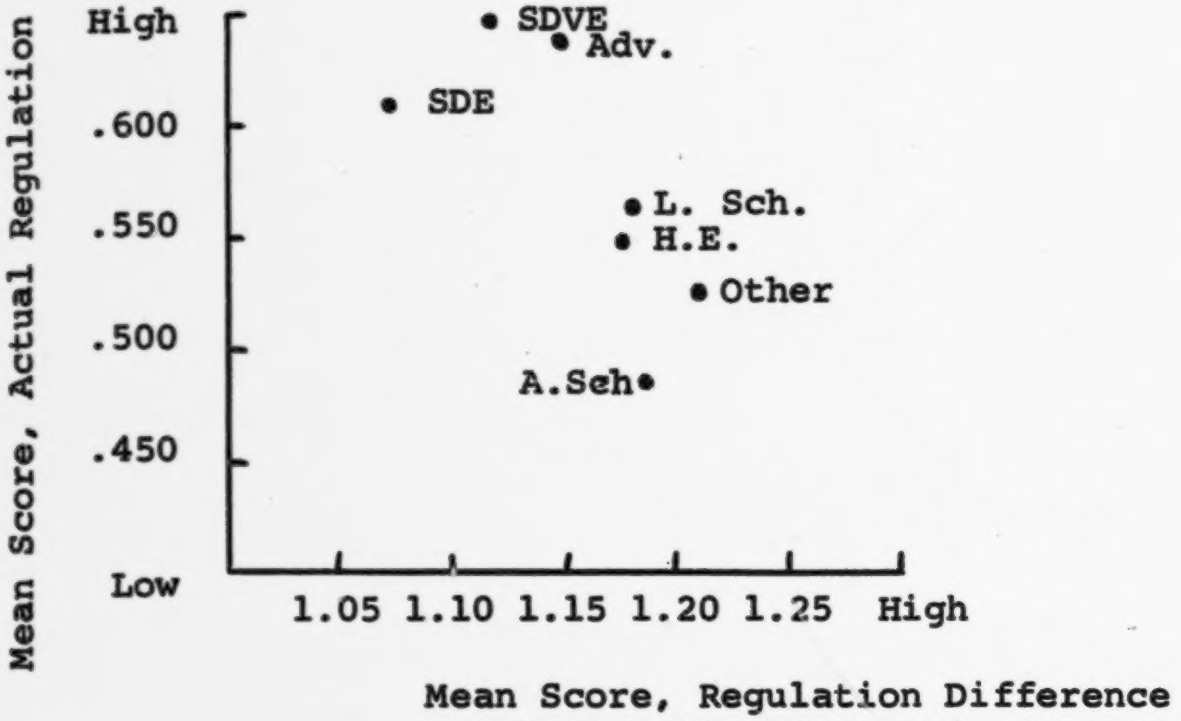
Relationship of actual involvement scores to ideal leadership scores.



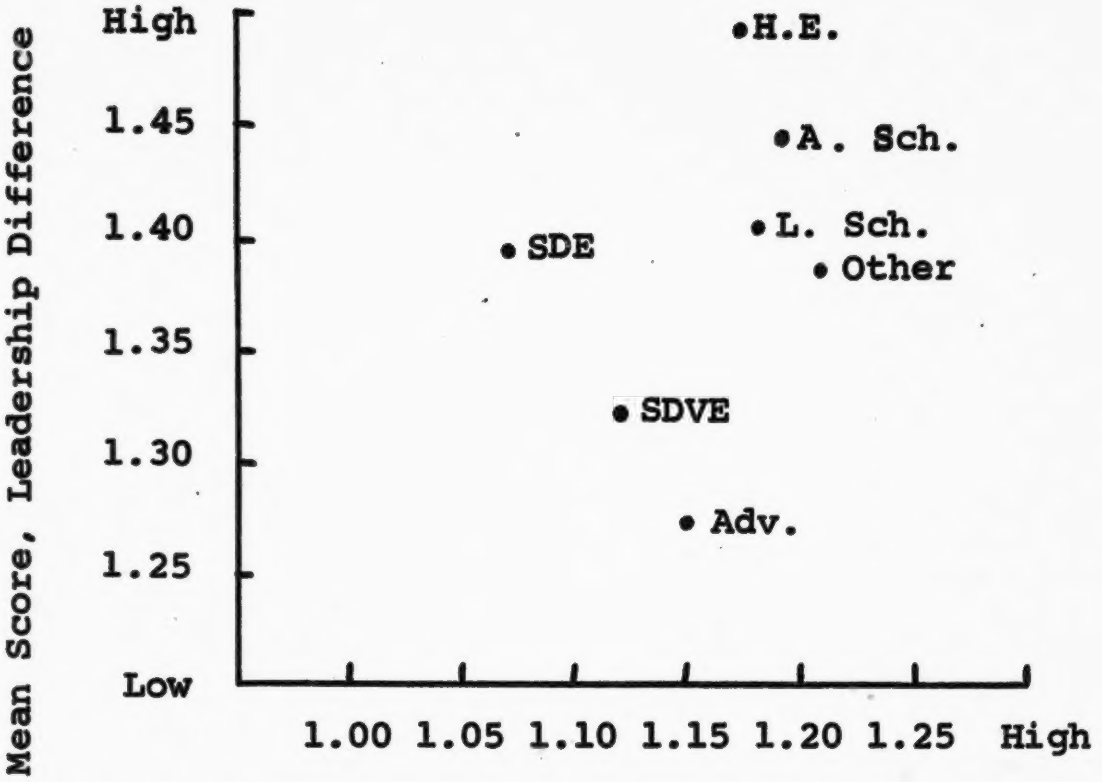
Relationship of leadership difference scores to involvement difference scores



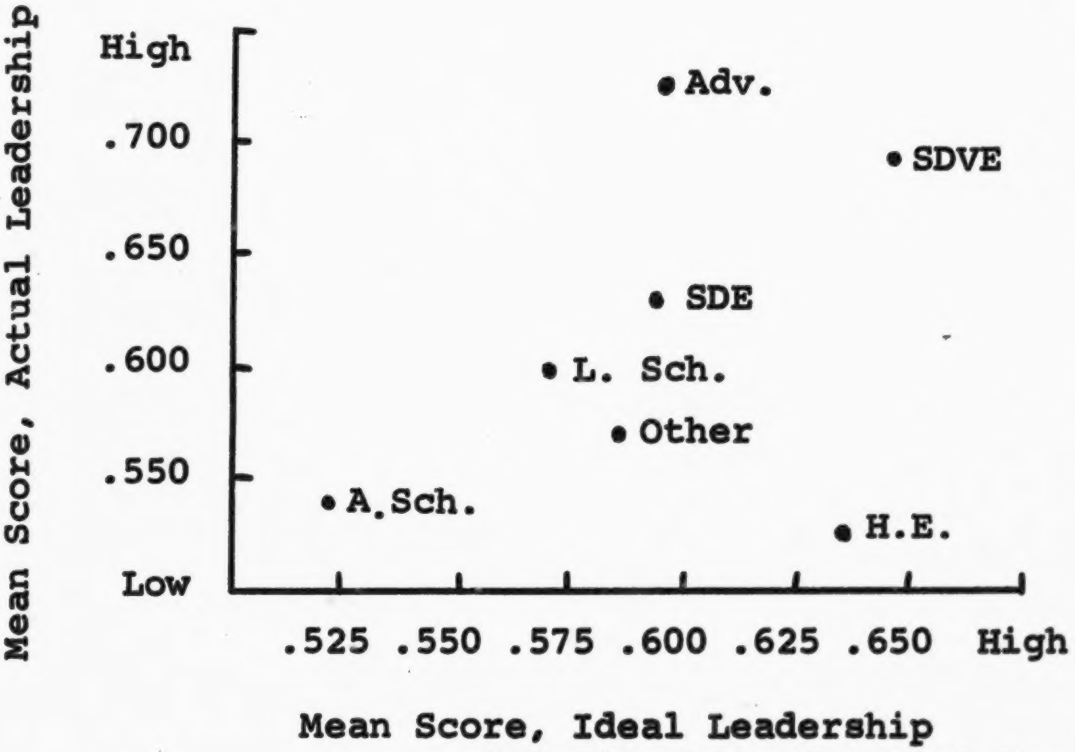
Relationship of actual leadership scores to leadership difference scores.



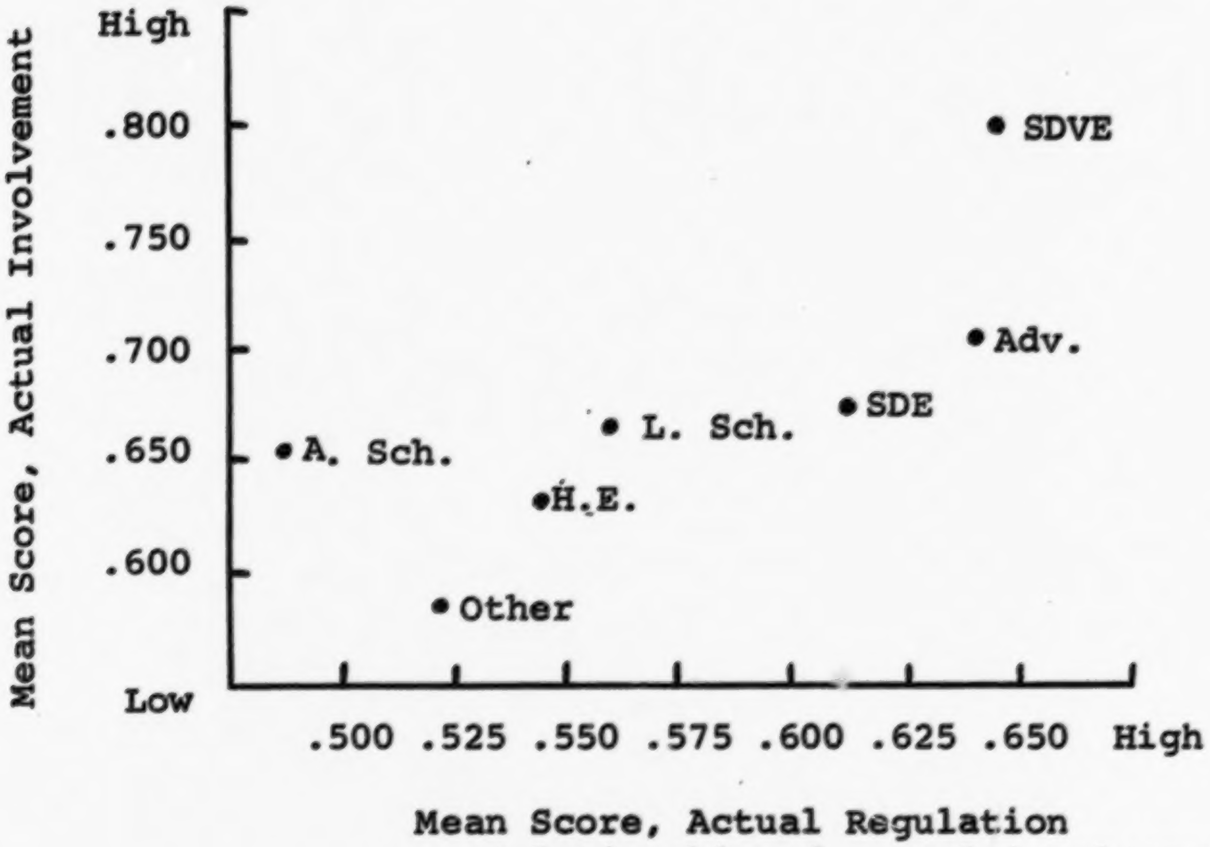
Relationship of actual regulation scores to regulation difference scores.



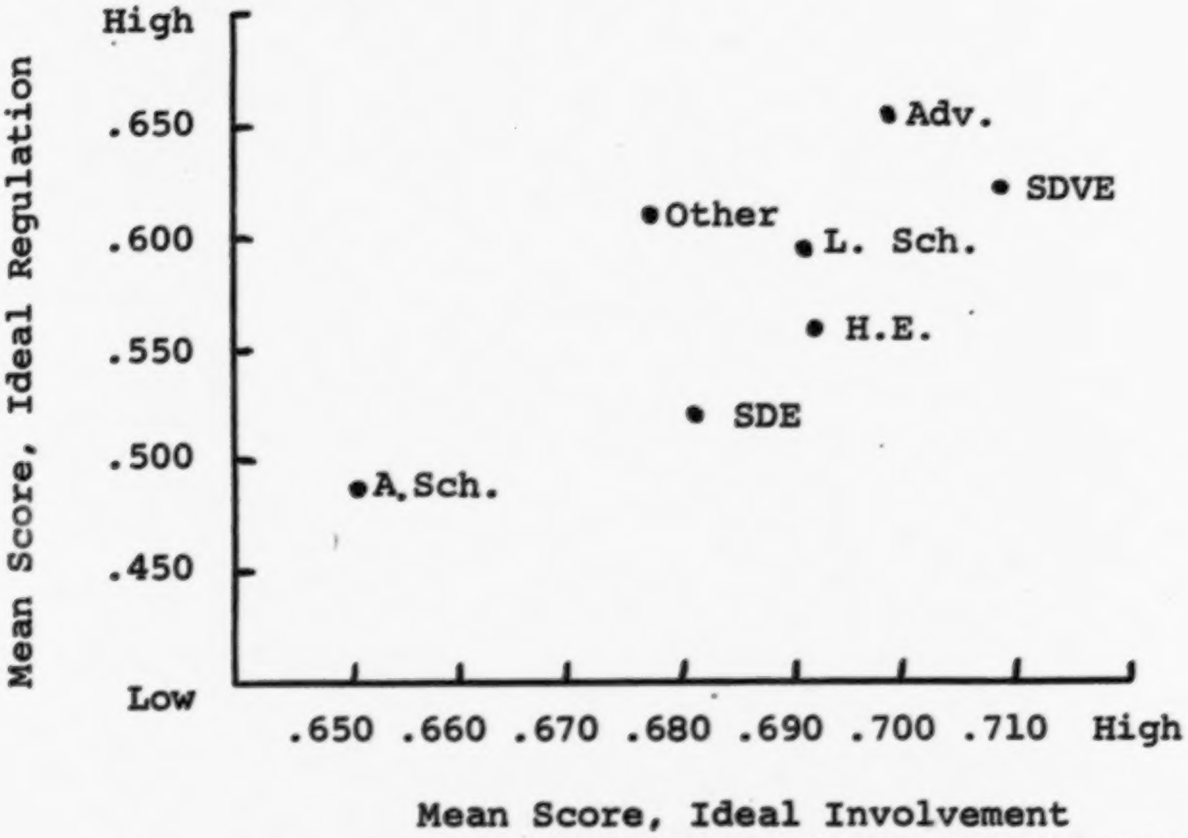
Relationship of leadership difference scores to regulation difference scores.



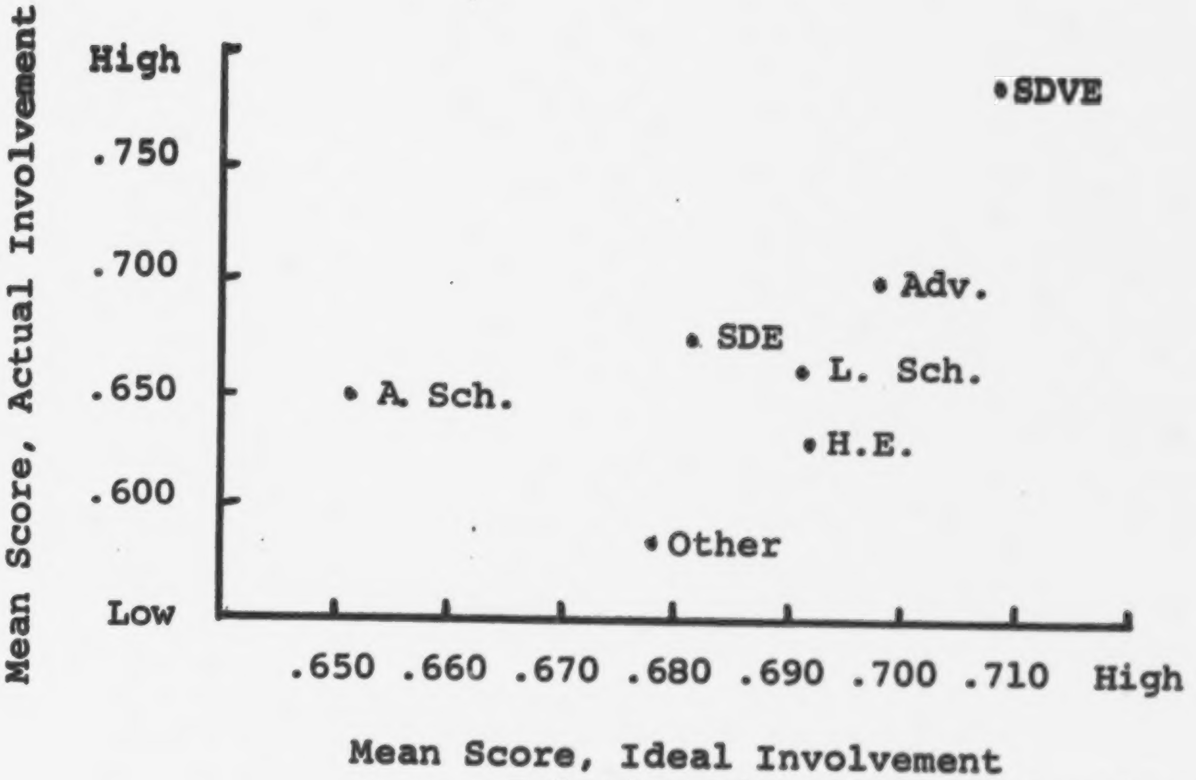
Relationship of actual leadership scores to ideal leadership scores.



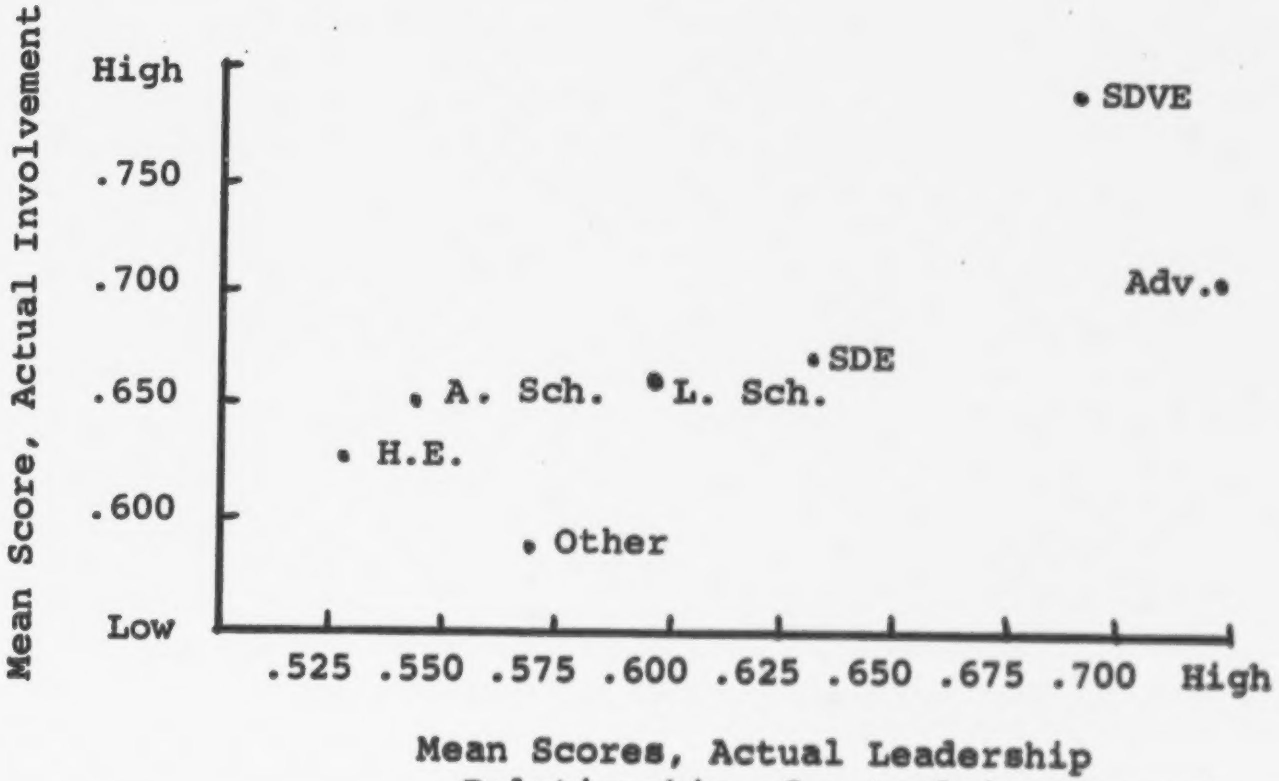
Relationship of actual involvement scores to actual regulation scores.



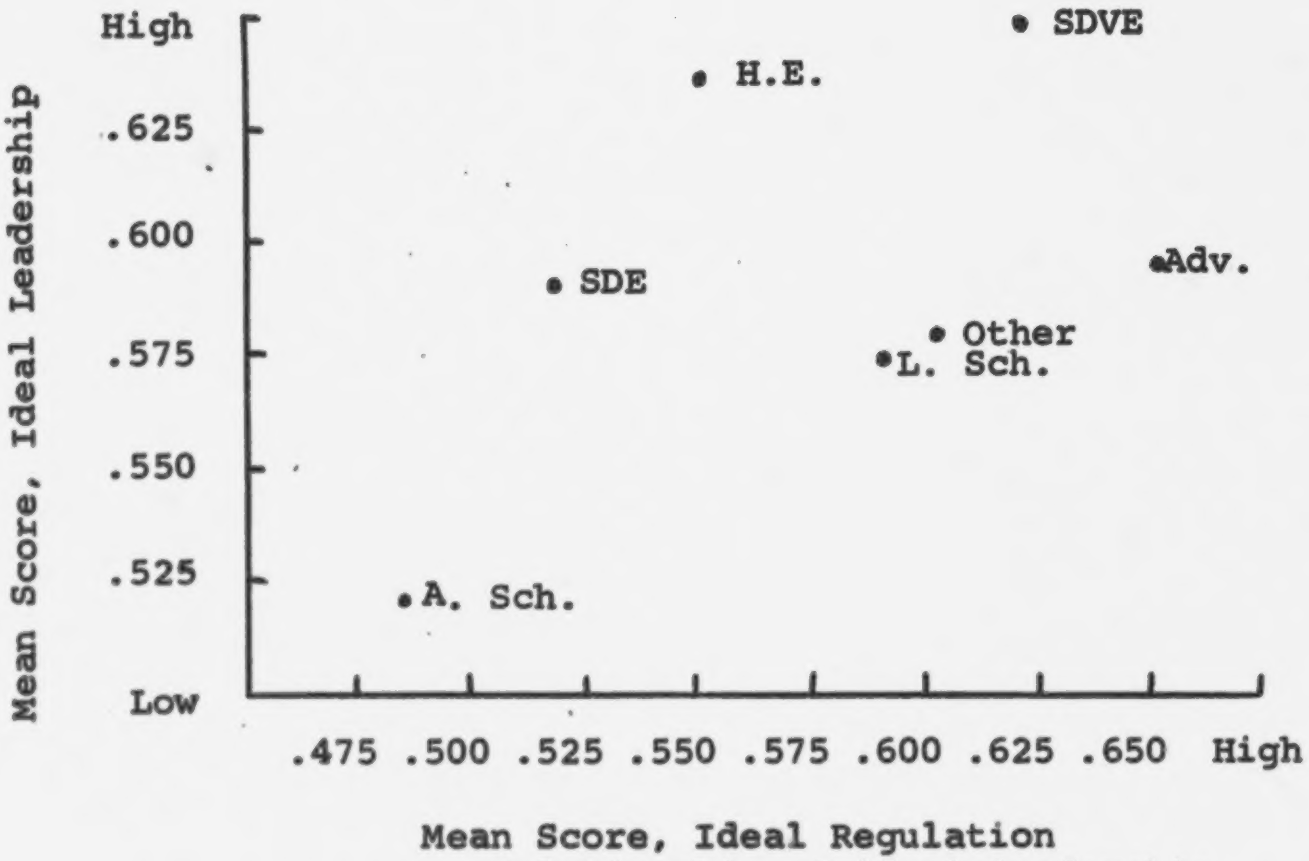
Relationship of ideal regulation scores to ideal involvement scores.



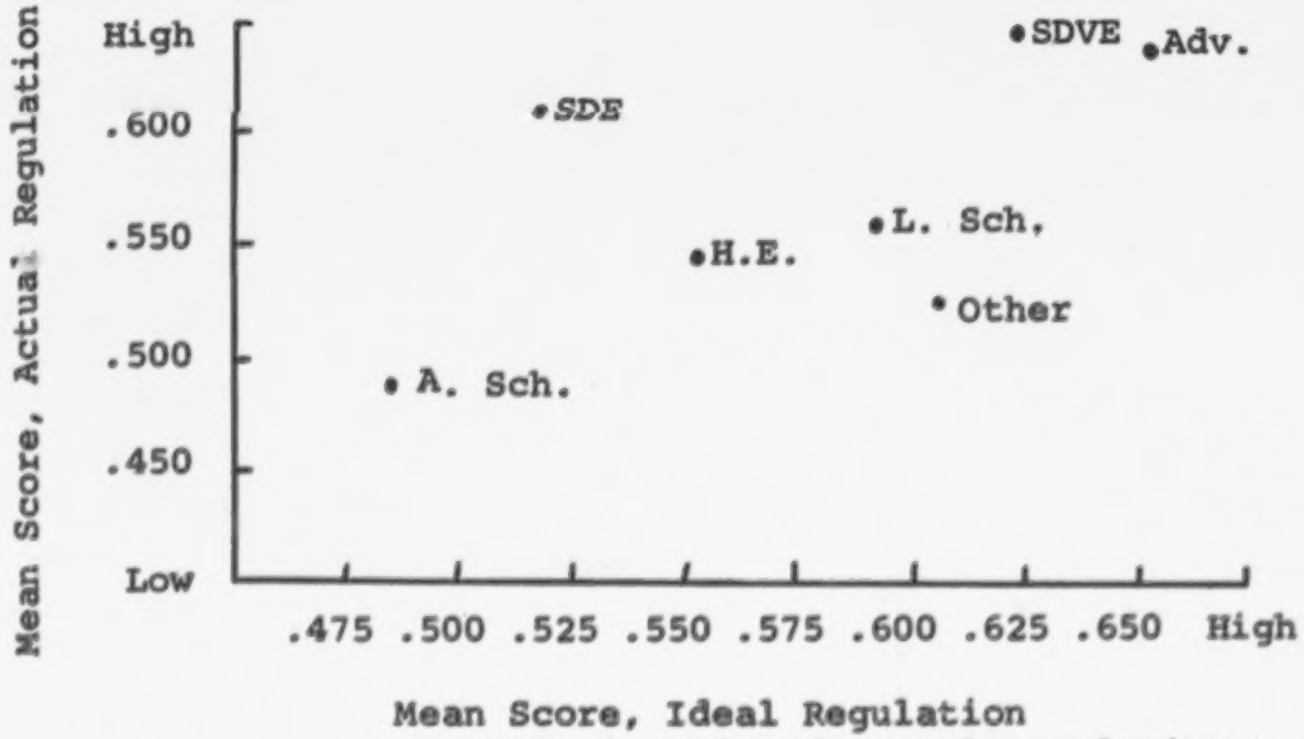
Relationship of actual involvement scores to ideal involvement scores.



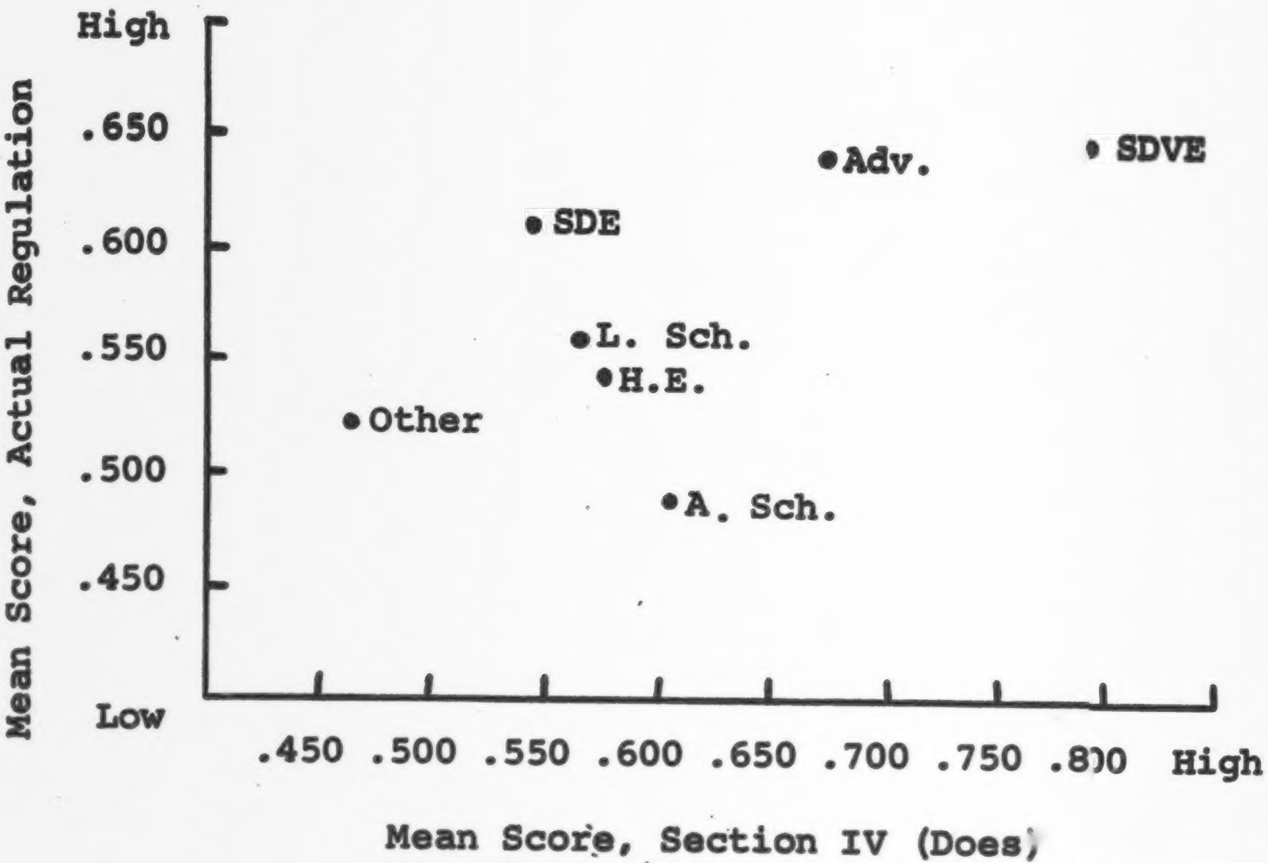
Relationship of actual involvement scores to actual leadership scores.



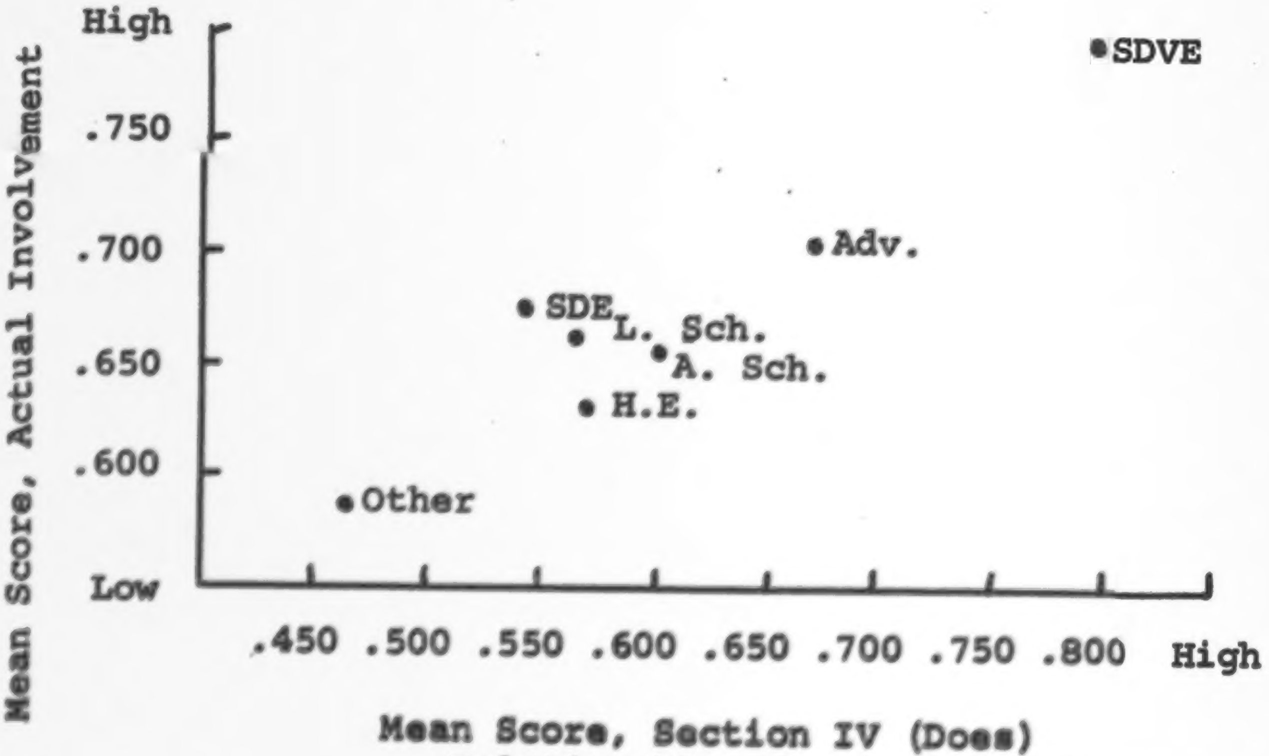
Relationship of ideal leadership scores to ideal regulation scores.



Relationship of actual regulation scores to ideal regulation scores.



Relationship of actual regulation scores to section IV (does) scores.



Relationship of actual involvement scores to section IV (does) scores.

5. Discussion of Results of Cluster Analysis

Material in this section will be presented in the following sequence:

a. Discussion of the results as they pertain to the general hypotheses

b. Generalizations based upon the correlations of cluster scores

c. Discussion of clusters and single items relevant to leadership, regulation and involvement in terms of reliability coefficients, means, standard deviations and chi-square tests.

d. Discussion of the results in terms of bar graphs of cluster scores and involvement and of the scatter plots of cluster scores

e. Generalizations relating to the research questions mentioned in the Introduction section of this report

f. Ideas for future analysis and study

In reviewing the material in this section, recall that cluster scores were so developed that a higher score indicates a greater amount or performance of the activity being measured. Thus a leadership score of .650 indicates a perceived greater quantity of leadership than a leadership score of .450; also, the smaller a cluster difference score, the more similar are responses to the actual and ideal dimensions of the activity (e.g., leadership) being measured.

The total sample (N=1783) will tend to produce more significant results with less actual variance than the smaller samples (N=905, N=878) would have. The specific (N) is reported for each statistical treatment, and wherever results are reported as percentages, the (N) upon which the percentage was based is reported. In discussions of consensus on any item, the response choices "don't know", "uncertain", or no response (where applicable) were not used to compute the consensus. The actual percentage of respondents in those categories can be obtained from Appendix IV, M, Response Frequencies of Respondent Groups (Expressed in Percents).

Discussion of the Results of Statistical Tests of the General Null Hypotheses*

Since the "Perceptions" sub-unit was a field study designed to be inclusive rather than exclusive, and since the hypotheses and research questions were general rather than specific, the .05 significance level was accepted throughout. Both the .05 and the .01 levels are reported where applicable. However, since many of the statistical results exceeded these levels of significance, the actual result is also reported.

> H_o1: There are no differences among response frequencies of respondent groups in the responses to items representing the (actual and ideal) leadership, regulation and involvement dimensions of the SDVE role.

H_o1 is rejected. Differences among respondent groups‡ at or beyond the .05 level of significance were demonstrated on 250 out of 303 items tested by means of the chi-square test. Significant differences do exist among group response frequencies to the items.

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* Many of the general null hypotheses are, in fact, combinations of several specific hypotheses. E.g., H_o1, expanded, might read: There are no differences among response frequencies of respondent group (A), (B), ... etc., in response to item (1), (2), ... (n) representing the (actual and ideal) leadership, regulation and involvement dimensions of the SDVE role. For this reason there may be qualifications in the acceptance or rejection of each general hypothesis, and care must be exercised in any generalizations. The interested reader should examine the results for each test for more precise bases of acceptance or rejection.

‡ Respondent groupings used for analyses are detailed in Appendix IV, A. Most analyses made use of seven groups: State Division of Vocational Education (SDVE), State Department of Education (excluding the SDVE), local schools, area schools, higher education, others, and a group consisting of a combination of State Board of Education members, State-Level Vocational Education Advisory Committee members, and Legislators. Complete results of these chi-square tests are included in Table A , pages 51 to 55 .

> H_o2: Mean scores among respondent groups on the (actual and ideal) leadership, regulation and involvement clusters do not differ.

H_o2 is rejected. Sixteen analyses of variance (eight each--clusters 1, 2, 3, 4, 6, 7, 8, 9--for samples N=905, N=878) produced 15 F values significant at or beyond the .05 level. In fact, 14 of the analyses of variance indicated a significance level at or beyond .01. These results tend to confirm the findings of the chi-square analyses for H_o1. These results are summarized below, and reported in detail in Appendix IV, D. Mean scores among the respondent groups differ significantly.

H_o2: Summary of Analyses of Variance Among Groups On (Actual and Ideal) Leadership, Regulation and Involvement Clusters

	Act. Lead.	Ideal Lead.	Act. Reg.	Ideal Reg.	Act. Inv.	Ideal Inv.	Ideal IV	Act. IV
Cluster	1	2	3	4	6	7	8	9
N = 878	01	01	01	05	01	01	01	01
N = 905	01	01	01	01	01	NS	01	01

> H_o3: There are no differences between response frequencies of a respondent group in responses to the actual and ideal dimensions of the same item.

H_o3 is rejected. Chi-square tests were made for differences in response frequencies of seven respondent groups on the "does" and the "should" dimensions of the same item stem. Differences significant at or beyond the .01 level were obtained in 278 of the 308 chi-square tests. From an examination of these results, it is apparent that items classified as regulation items yielded fewer significant differences, and all 30 non-significant (.01) chi-square values were obtained from items classified as regulation. Table A, pages 51 to 55 presents the details of these analyses.

H_o4: Mean scores among respondent groups on leadership, regulation and involvement cluster difference scores do not differ.

H_o4 is rejected. All eight analyses of variance (four each for sample N=905, N=878 on clusters 10c-13c) produced F values significant at or beyond the .05 level. (Seven of these F values were significant at or beyond the .01 level.) These results indicate that there are significant differences among respondent groups in the perceived disparities between the actual and ideal leadership, regulation and involvement dimensions of the SDVE role. These results are summarized below, and reported in detail in Appendix IV, D. Inspection of a tabulation of the actual responses to the Group Interview Guide indicates that on nearly every item, the respondent indicated that, ideally, more emphasis should be placed upon the activity in question. (See Appendix IV, M, Response Frequencies of Respondent Groups (Expressed in Percents), to compare the concentration of responses on the "Does" and on the "Should" dimensions of the same item stem.)

H_o4: Summary of Analyses of Variance Among Groups On Leadership, Regulation and Involvement Cluster Difference Scores

	Lead. Diff.	Reg. Diff.	Inv. Diff.	Sec. IV Diff.
Cluster	10c	11c	12c	13c
N = 878	.01	.05	.01	.01
N = 905	.01	.01	.01	.01

H_o5: There are no differences among response frequencies of respondent groups in their responses to items relating to attitudes or opinions about questions and issues in education.

H_o5 is rejected. Chi-square tests on 24 items classified as "attitude" items, both from the Group Interview Guide and from the addendum to the Group Interview Guide, resulted in 20 differences significant at or beyond the .05 level. Within the sample there are significant differences in attitude about, and opinion of, issues in education as measured by items on the Group Interview Guide. These results are summarized below; details appear in Table A, pages 51 to 55 .

H_o5: Summary of Chi-Square Tests for Significant Differences Among Respondent Groups on Items* Relating to Attitude

Item	Significance	Item	Significance	Item	Significance
1	.01	23	NS	38	.01
8	.01	28	.01	40a	.01
10	.01	29	NS	44	.01
11	.01	31	.01	1(A)	.01
13	.01	33	.01	2(A)	.01
14	.01	34	NS	4(A)	.01
18	.05	36	.01	6(A)	.01
19	.01	37	NS	8(A)	.01

* All items are from Section I (or addendum) of the Group Interview Guide.

H_o6: Mean scores obtained by the respondent groups on an item cluster indicating attitude about vocational education do not differ.

H_o6 is rejected. Two analyses of variance (one each for samples N=905, N=878 on cluster 5) produced F values significant at or beyond the .01 level. Attitude differences, as measured by the attitude cluster developed from items from the Group Interview Guide, do exist among respondent groups. As might be expected, the highest mean score was obtained by the SDVE group, while respondents classified as "other" generally scored among the lowest. Analyses of variance among group responses to the attitude cluster lend support to the results obtained in the chi-square analyses for H_o5. Details of this analysis are reported in Appendix IV, D, under the heading of cluster 5.

H_o7: Mean cluster scores among legislator, state board of education and state vocational education advisory council groups (i.e., state-level policy and advisory groups) do not differ.

H_o7 is not rejected. Twenty-six analyses of variance among these three respondent groups produced only three F values significant at the .05 level. These three significant values were obtained on clusters measuring actual involvement and involvement difference, i.e., clusters 6, 9 and 12c, and only for the sample (N=905). Representatives of these groups used in the sample for this study did not respond in a significantly different manner. This series of analyses of variance lends credence to the combination of representatives of these three groups into one group for purposes of analysis throughout this study. These analyses are summarized in Table C, pages 59 and 60 and detailed in Appendix IV, D.

H_o8: Mean cluster scores of respondents representing local schools, area schools and higher education do not differ.

H_o8 is not rejected. Twenty-six analyses of variance (13 each for sample N=905, N=878) produced 21 nonsignificant F values, two significant at the .05 level, and three significant at the .01 level. All significant results were obtained in the sample N=878, and three of the five significant results were obtained on clusters dealing with leadership and leadership difference. In general, and with the qualifications noted, respondents representing these various segments of education did not obtain significantly different cluster scores. This result, however, does not preclude the possibility that there were divergences of opinion on specific items. Table , pages and presents a summary of these results. Appendix IV, D, presents details of these analyses.

H_o9: Mean cluster scores of the SDVE group and of other educator groups as represented by respondents from local schools, area schools and higher education, do not differ.

H_o9 is rejected. Twenty-six analyses of variance (13 each for samples N=905, N=878) produced 22 F values significant at or beyond the .05 level, including 19 F values significant at or beyond the .01 level. The SDVE group, in fact, does indicate that it has perceptions of "what is" and "what should be" its role which differ significantly from those of other educator groups. Table , page and presents a summary of these results. Details appear in Appendix IV, D.

H_o10: Mean scores among the SDVE group, the state board of education, legislator and state vocational education advisory council groups (state-level policy and advisory groups) do not differ.

The results for the general null hypothesis are too indefinite for clear rejection of the null hypothesis, and individual cluster results vary between samples N=905 and N=878. In 26 analyses of variance, 14 F values significant at or beyond the .05 level were obtained. Four of these significant F values were obtained on involvement clusters, where it would be expected that SDVE involvement in its own activities is higher than the involvement of any other group. Table C, pages 59 and 60, presents a summary of these results. Details appear in Appendix IV, D.

> H_o11: Mean scores among state-level policy and advisory groups (i.e., legislators, state board of education members and state vocational education advisory council members) and respondents from respondent group "other" (i.e., representatives of business, labor, etc.) do not differ.

The results for this general null hypothesis are too indefinite for clear rejection of the null hypothesis. Of the 26 analyses of variance, F values significant at or beyond the .05 level were obtained in 12 tests. Four of these significant F values were obtained on involvement clusters, where it would be expected that state board and advisory group involvement in SDVE activities would be greater than the involvement of the general public. Table C, pages 59 and 60, presents a summary of these results. Details appear in Appendix IV, D.

Cluster Correlation Matrices

From inspection of the correlations between and among the item clusters (Table D, pages 61 and 62) it can be seen that the dimensions of (actual and ideal) leadership, regulation and involvement--clusters 1, 2, 3, 4, 6, 7--show positive correlations. These correlations indicate stronger relationships between the "actual" clusters and between the "ideal" clusters of different activities than between an actual and an ideal cluster score on the same activity.

Clusters were developed so that higher cluster scores indicated a greater perceived or expected amount of the quantity or activity being measured than lower scores. For example, a score of .850 on cluster 1, actual leadership, indicates that the respondent perceived a greater amount, or higher level of, present SDVE leadership than did a respondent with a score of .550. The highest possible score was 1.00. The lower a cluster difference score, the more similar the actual and the ideal dimensions of the activity.

In the following discussion of the correlations, the value terms (high, low, more, less, strong, weak) refer to relative scores or relationships to scores obtained on the clusters. For example, if in two clusters a high score indicates the same kind of relationship (in this case a greater amount or quantity of the activity being measured) and the two clusters have a positive correlation of .65, then respondents who obtain high scores on one cluster also tend to obtain high scores on the other cluster. Inverse relationship indicates that a high score on one cluster is associated with a low score on another cluster, and vice versa.

Each correlation coefficient is an index of relationship. Correlations between and among clusters were computed for both sample groups (N=905, N=878). The following general discussions of the correlations include both groups. Where there are apparent substantial differences in the relationships, these differences will be noted. However, no tests of significance were computed for differences between sample groups. Both correlation coefficients will be presented in the discussions. From an inspection and analysis of the correlations, the following generalizations seem appropriate. (Correlations for sample N=905 are given first; those for N=878 are given second in parentheses.)

1. There is a strong positive relationship between (scores representing) actual leadership and actual regulation. $r_{1,3} = .58\ (.59)$.

2. There is a strong positive relationship between actual leadership and actual involvement. $r_{1,6} = .59\ (.52)$.

3. There is a moderately strong positive relationship between actual leadership and level of personal involvement. $r_{1,9} = .46\ (.42)$.

4. There is a very strong inverse relationship between actual leadership scores and scores on cluster 10c, leadership difference. $r_{1,10c} = -.86\ (-.80)$.

5. Respondent group (N=878) evidenced a stronger positive relationship between actual leadership and attitude towards education than did group (N=905). $r_{1,5} = .28\ (.49)$.

6. Respondent group(N=878) evidenced a somewhat stronger inverse relationship than did group (N=905) between actual leadership and cluster 11c scores, indicating a perceived similarity between actual and ideal regulation. $r_{1,11c} = -.37\ (-.51)$.

7. There is a strong positive relationship between ideal leadership and ideal regulation. $r_{2,4} = .51$ (.45).

8. There is a moderately strong positive relationship between actual regulation and actual involvement. $r_{3,6} = .41$ (.48).

9. There is a strong inverse relationship between actual regulation and cluster 10c, leadership difference. $r_{3,10c} = -.50$ (-.56).

10. There is a very strong inverse relationship between actual regulation and the difference between actual and ideal regulation (e.g., respondents with high actual regulation scores tend to have low regulation difference scores). $r_{3,11c} = -.72$ (-.83).

11. There is a very strong inverse relationship between actual general involvement and the difference between actual and ideal general involvement. $r_{6,12c} = -.64$ (-.73).

12. There is a strong positive relationship between actual general involvement and actual personal involvement. $r_{7,8} = .54$ (.60).

13. There is a strong positive relationship between leadership difference scores and regulation difference scores. $r_{10c,11c} = .45$ (.56).

14. There is a strong positive relationship between leadership difference scores and general involvement difference scores.* $r_{10c,12c} = .55$ (.54).

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* There are various hypothetical explanations for the relationships shown in 14, 15 and 16 above, such as: (1) persons involved in SDVE activities perceive those activities as leadership-oriented; (2) persons involved in SDVE activities are closer to what is actually going on; (3) persons not involved in SDVE activities are uninterested in, or uninformed about, SDVE activities; (4) persons not involved in SDVE activities do not perceive the SDVE as a leadership agency. It is probably true that SDVE employees (who have the highest scores on the involvement clusters as indicated by cluster mean scores) would logically perceive their jobs as leadership-oriented.

15. There is a strong positive relationship between leadership difference scores and personal involvement difference scores.* $r_{10c,13c} = .44$ (.47).

16. There is a very strong positive relationship between general involvement difference scores and personal involvement difference scores.* $r_{12c,13c} = .70$ (.72).

17. There is a strong positive relationship between actual and ideal personal involvement scores, and this relationship is somewhat stronger than the relationship between actual and ideal general involvement scores. $r_{8,9} = .43$ (.46); $r_{6,7} = .35$ (.32).

18. There is a moderate inverse relationship between actual general involvement and leadership difference scores. $r_{6,10c} = -.48$ (-.54).

19. There is a positive relationship between actual and ideal leadership, and this tendency is somewhat stronger in respondent group (N=905) than in (N=878). $r_{1,2} = .36$ (.22).

20. Scores on cluster 9, perception of actual personal involvement:

    a. Are moderately related in a positive manner to actual leadership. $r_{9,1} = .46$ (.42).

    b. Demonstrate a low, but positive, relationship with perceptions of actual regulation. $r_{9,3} = .27$ (.37), but

    c. Show a weak positive relationship to ideal regulation. $r_{9,4} = .18$ (.15).

    d. Show a very strong positive relationship to actual general involvement. $r_{9,6} = .73$ (.76).

    e. Are inversely related to scores representing the difference between actual and ideal personal involvement. $r_{9,13c} = -.42$ (-.51).

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* See footnote (*) previous page.

21. Scores on cluster 1, actual leadership:

    a. Are strongly and inversely related to leadership difference scores, indicating that respondents perceiving a high level of actual leadership do not perceive as great a need for change in leadership activities as those respondents that perceive a low level of actual leadership. $r_{1,10c} = -.86$ $(-.80)$.

    b. Demonstrate moderate inverse relationships between scores on clusters 12c and 13c, general involvement difference and personal involvement difference. $r_{1,12c} = -.49$ $(-.45)$; $r_{1,13c} = -.35$ $(-.41)$.

Correlation coefficients obtained on clusters 8 and 9--the ideal and actual personal involvement (i.e., involvement of "persons like you") in SDVE activities--substantiate the correlation coefficients obtained for clusters 6 and 7, the actual and ideal "general" involvement.

Items for clusters were selected a priori, dichotomously scored, and tested for conformity to the a priori assumptions by means of a chi-square procedure. Cluster reliability coefficients were computed by means of the Kuder Richardson Formula Number 20, and are reported in detail in Appendixes IV, H and I.

Inspection of the cluster reliability coefficients for both sample groups indicates that all except cluster 5 produced high reliability coefficients. This indicates that if repeated measures were made on the same kinds of people, similar scores could be expected.

Cluster	Reliability Coefficient		Cluster	Reliability Coefficient	
	(905)	(878)		(905)	(878)
1	.93	.90	8	.91	.90
2	.90	.87	9	.94	.95
3	.86	.86	10c	.86	.85
4	.76	.69	11c	.66	.69
5	.57	.59	12c	.84	.86
6	.94	.95	13c	.81	.84
7	.89	.87			

Mean scores for clusters one through nine must fall between 1.00 and 0.00 since they were developed as a proportion.[*] Mean scores on the difference clusters (clusters 10c, 11c, 12c, 13c) must fall between 2.00 and 0.00, since a constant (1.00) was added to each "should" cluster computation to circumvent the possibility of negative numbers. Thus a cluster difference score falling between 2.00 and 1.00 indicates a perceived need for more of the activity or quality being measured (i.e., a change to more of the "should" dimension than of the "does" dimension). A cluster difference score falling between 1.00 and 0.00 indicates a perceived need for less of the activity or quality being measured (i.e., a change to less of the "should" dimension than of the "does" dimension). Group mean scores on each cluster are reported in Table B, pages 56 to 58.

The magnitude of the standard deviation indicates how compact or clustered the respondent scores are. The smaller the standard deviation, the more nearly alike are the responses of the respondent group. It will be noted that in most cases the SDVE group responses were more tightly clustered than the responses of any other group, and legislator group generally produced the next smallest standard deviation. The respondent group labelled "other" generally produced the most variance of within-group responses. Group standard deviations on each cluster are detailed in Table B, pages 56 to 58.

Table A, pages 51 to 55 presents the chi-square results for each item of the Group Interview Guide. These chi-square tests were computed on the response frequencies of seven respondent groups.[+] It can be noted that items designated as regulation items produce proportionately fewer significant results and generally lower chi-squares than items designated as either leadership or involvement. This same pattern of results holds true for the chi-square tests for significance of differences between a group's "does" and "should" responses to the same item stem. (Table E , pages 63 to 64 , presents these results. By checking the compiled frequency of responses to items,

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[*] Items for these clusters were dichotomized as 1 or 0. Cluster scores were then computed as: $\frac{\Sigma\left[(1)/\Sigma(1+0)\right]}{N}$

[+] These groups represented persons from: (1) the SDVE, (2) the SDE (excluding SDVE), (3) Local Schools, (4) Area Schools, (5) Higher Education, (6) State Board of Education, Legislator and State Vocational Education Advisory Groups, and (7) Other Respondents.

Appendix IV, M , Response Frequencies of Respondent Groups (Expressed in Percents, it can be seen that these regulation items also produce low consensus among the sample. There is less agreement upon the regulatory function (both actual and ideal) for the SDVE than upon other SDE activities. Perhaps this means that the SDVE role is in the process of changing from the traditional monolithic emphasis upon regulation to an emergent need for emphasis upon leadership and involvement.

There was a consistent trend throughout the study for respondents to reflect a higher extent of consensus on leadership items than on regulatory items, and a higher extent of consensus on the ideal ("should" items) than on the actual ("does"items) SDVE members, as a group, evinced higher consensus for the SDVE role (actual and ideal) than did the total sample or other respondent groups. This result certainly was not unexpected. The SDVE members are obviously more involved in SDVE activities than any other single group, and as such are closer to the actual day-to-day activities of the SDVE. Since the SDVE, whatever state, has the general function of superintendence of the statewide vocational-technical education program, there was little variance among states.

There was also a consistent trend for the percent of "don't know" responses and for unanswered items (i.e., for no response) to be higher on the "does" items than on the "should" items. Among the respondent groups used in analysis, this percentage was generally highest for the group classified as "other" and second highest for the legislator group.

The consistent trend for a higher extent of consensus on the "should" items than on the "does" items may be explained in part by the fact that, although a respondent does not know what the SDVE really does, he does have a personal notion or preference for what the SDVE should do.

Analysis of the bar-graph presentations of group mean cluster scores reveals both striking similarities and striking differences between and among respondent groups and the sample groups (N=905), (N=878).

At the broadest level of generalization, there appears a consistent trend for the mean cluster scores of sample group I (N=905) to be higher than the mean scores of sample group II (N=878) on clusters representing the actual dimensions of leadership, regulation and involvement, and on the cluster representing attitude toward vocational-technical education. On the other hand, there is an observable trend for mean cluster scores sample group I on clusters representing the ideal dimensions of leadership, regulation and involvement; and on all four of the cluster difference scores, although the magnitude and the consistency of the trend on the difference clusters are not as marked as on the ideal clusters.

The mean cluster scores also indicate that the State Board of Education, State Vocational Education Advisory Groups, and State Legislators reflect a relatively high perception of actual leadership and regulation; in some cases higher perceptions of these dimensions than even the SDVE itself. These same groups, on the other hand, indicate relatively low expectations for ideal leadership and low leadership difference scores. This may indicate that these groups perceive the SDVE as performing about that amount of leadership which is seen as desirable, and as perceiving a minimal need for change towards a more active leadership role for the SDVE. These same groups also reflect high ideal regulation scores and high regulation difference scores, indicating a perceived need for more regulation. If these perceptions are widespread among such influential groups and policy-makers, they may present very real problems or roadblocks for attempting changes in the SDVE role, especially if those changes are toward more participation in leadership activities and less in regulatory activities.

Representatives of local schools, area schools and higher education obtained mean cluster scores that were similar.* This indicates that practicing educators, regardless of their level of specialty, tend to have similar perceptions of the actual and ideal SDVE role. It can also be noted that these three groups obtained among the lowest scores on cluster 1, actual leadership of the SDVE, and among the highest scores on the leadership difference cluster, indicating a perceived need for more leadership from the SDVE. These results provide a noteworthy comparison for the results reported in the previous paragraph.

Group responses to Section IV of the Group Interview Guide, representing frequency of involvement in selected SDVE activities, are presented on the graphs in figures to .* The results are generally consistent in indicating that all groups believe that they could and should be more involved in SDVE activities. In some specific activities, such as determining staff needs, the respondent groups indicate that they do not perceive the same need for involvement as in relatively broad general activities as represented by planning activities, policy formulation and setting goals. For some activities, such as field testing, implementing programs and research, there are consistently large differences between the actual and the ideal dimensions of involvement, especially among the educator groups. If there is merit in the results of much of the recent group dynamics work, it would seem that SDVE could obtain more cooperation in the development of statewide vocational programs if they encouraged the involvement, at the planning and decision-making levels, of those groups which believe they should be more involved and which may, in fact, be instrumental in the implementation of those plans.

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* See also the results for H_o8.

Pages 82 to 99 show the relationships of group mean scores on pairs of item clusters. Certain generalizations hold true for both groups of the sample (N=905, N=878), as well as among respondent groups.

The SDVE and Advisory groups (the latter a combination of State Board of Education members, Legislator and State Vocational Education Advisory Committee members) tend to be psychologically "close" to one another in their responses, as do the local school, area school and higher education groups. Representatives of the SDE tend to be more

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* In Section IV of the Group Interview Guide respondents were asked to respond to items in terms of their own personal involvement; i.e., how frequently DOES and how frequently SHOULD, the Division involve persons like you in (activity 1, 2, ... 14). Since the sample included people with different kinds of responsibilities and relationships to vocational education, wide ranges of responses were noted. It seemed more useful to report results as scores obtained by groups, rather than to discuss significance of differences between or among groups. Significance tests for differences among response frequencies of seven groups are reported in Table E, page 63. These results, however, may be more artifact than fact, since the SDVE members could obviously be expected to be more involved in SDVE activities than any other single group. Therefore, most of the significance of differences could be explained by the large difference between (1) SDVE involvement in its own affairs, and (2) outside involvement in SDVE affairs.

similar to the SDVE in their responses than to other educator groups, although this relationship is not as consistent as the one noted previously.

Strong inverse relationship trends (i.e., those who tend to score high on one cluster tend to score low on the other cluster) are noted between responses to clusters representing: (1) actual leadership and Section IV difference, (2) actual leadership and leadership difference, (3) actual regulation and regulation difference. It makes sense, for example, that respondents who perceive a high degree of present leadership perceive smaller differences between actual and ideal leadership than respondents who perceive a low degree of present leadership. In like manner, those who are closely involved in SDVE activity and are about as involved as they believe they should be (i.e., who have low personal involvement difference scores) probably perceive a high degree of actual leadership, since they themselves are a part of the SDVE activity. Strong positive relationship trends (i.e., those groups high on one cluster tend to be high on the other cluster) are noted between responses to clusters representing: (1) actual leadership and actual personal involvement (Section IV, "does"), (2) actual leadership and actual regulation, (3) actual involvement and ideal leadership, (4) leadership difference and involvement difference, (5) actual involvement and actual regulation.

There are at least two explanations for the observable phenomenon of the SDVE responses being consistently quite different--or more extreme --than the responses of other respondent groups. Since this study was directed primarily at the SDVE and its role, funcation and operation, it may be that the SDVE members, being more closely connected to the actual day-to-day operation of the activities in question are able to generate more definitive responses. On the other hand, it may be that the SDVE group is unaware of what role other respondent groups attribute to it, or even unaware that the SDVE perceives itself as doing considerably more than other groups--especially other educator groups--perceive it doing.

Inspection of the scatterplots of mean scores also shows that the SDVE group, in most instances, is at one extreme or the other of the plotted scores. This group generally appears at the high end of scores on the (actual and ideal) leadership, regulation and involvement clusters and at the low end of scores for the difference clusters. This shows that the SDVE group perceive themselves as high on the dimensions of leadership, regulation and involvement, and have high conceptual ideals for the performance of leadership, regulation and involvement. This may be taken to indicate that the SDVE does not perceive as great a need for change in its performance of leadership, regulation or involvement activities as other groups perceive.

In analyzing the scatterplots of cluster scores the reader is cautioned to note that the group sizes vary, and thus have different relative weights and influence. The SDVE group (which has more extreme scores than most other groups on most of the clusters) is one of the largest of the respondent groups and, therefore, influences the total results more than smaller groups. Relationships which at first glance appear to have strong linear relationships might "wash out" if a single large group were removed. This is particularly true of the SDVE group which, besides being one of the largest groups, also generally yields the most extreme scores.

Correlation coefficients, on the other hand, indicate relationships between variables using each individual's score regardless of group affiliation. Each individual has the same potential weight in producing the correlations.

Considering the size of both sample groups (N=905, N=878) and the fact that the same kinds of respondents were invited to participate in the data-collection session within each sample, there were some striking differences in responses between the groups. It might be that these differences can be explained in one (or more) of the following ways:*

1. Regional differences. For example, group (N=905) includes 2 Southern states; group (N=878) includes 9 Southern states.

2. State Size (population). E.g., group (N=905) includes (of the ten largest states) those ranked 5, 8, 9 in population size in the 1960 census; group (N=878) includes states ranked 1, 2, 3 and 7.

3. State size in relation to population density. Sample group (N=905) includes six states with large area and small population; sample group (N=878) includes only two such states.

4. Urban-rural differences. It is possible that one sample group contained respondents that were more urban- or rural-oriented than the other.

5. Slight change in the Group Interview Guide. Some modifications of the Group Interview Guide changed a few items, and added or deleted an item or two from the clusters. In the last draft of the Group Interview Guide the instructions

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* Refer to Appendix I.F., States Cooperating in Data Gathering Between July 1966 and June 1967, for a comparison of states in each sample group.

to respondents were more formal, definitions were written.

The SDVE group, and to some extent the SDE group, and the respondent group composed of state-level policy and advisory persons (State Board of Education members, State-Level Vocational Education Advisory Group members, and Legislators) produced similar response patterns. In the same manner, the SDVE group and the respondent groups composed of other educators (representatives from local schools, area schools and higher education) are often dissimilar in their response patterns. This might indicate that SDVE persons think and react differently from other professional educators, and, in fact, are more similar to the policy and advisory groups than to the educators in thoughts about education, where the groups differ.

The above generalizations and results of other analyses of the data evoke two areas for further generalization and speculation. It may be that the "facts of life" in the state education complex are such that state-level educators become oriented more as "politicians" than as professional educators. Their reference groups may be other government employees and agencies and their own policy and advisory groups. State education programs depend to a large degree for their success and continuation upon approval by legislative bodies and advisory groups. State governments expect--and have every right to expect--state educational administration to superintend carefully the ever-increasing education funds. Furthermore, state legislative and policy bodies often mandate changes for the state educational administrators to implement. The ability to get educational things done at the state level may depend upon the ability to influence fiscal officers, legislators, or state educational policy groups. It may not be so surprising, then, to find that the responses of state educational administrators are most similar to the state-level policy and advisory group responses.

It may also be that state education administrators experience conflicting role expectations from at least two sides--the expectation for regulation from State bureaucrats, policy groups and legislators, and the expectation for strong, viable educational leadership and direction from professional educators. Indeed, the problems attendant with being a professional person employed in a governmental bureaucracy may offer fertile grounds for future role and role conflict research. Education, because of its predominantly state orientation may be a productive place to initiate such research.

In analyzing the scatter plots of cluster scores the reader is cautioned to note that the group sizes vary, and thus have different relative weights and influence. The SDVE group (which has more extreme scores than most other groups on most of the clusters) is one of the largest of the respondent groups and, therefore, influences the total results more than smaller groups. Relationships which at first glance appear to have strong linear relationships might "wash out" if a single large group were removed. This is particularly true of the SDVE group which, besides being one of the largest groups, also generally yields the most extreme scores.

Correlation coefficients, on the other hand, indicate relationships between variables using each individual's score regardless of group affiliation. Each individual has the same potential weight in producing the correlations.

Generalizations relating to the research questions mentioned in the Introduction section of this report

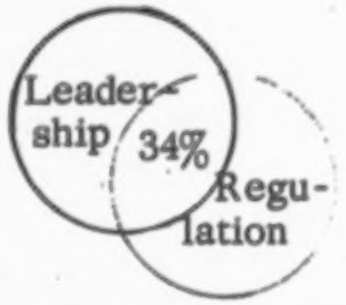
How is the SDVE viewed in respect to the dimensions of inspection-regulation and leadership-change? What are the perceived (actual and ideal) role(s) of the SDVE as expressed by respondents? What are the relationships between the dimensions of (actual and ideal) leadership, regulation, and involvement?

Responses to items and clusters of items from the Group Interview Guide indicate that an SDVE is perceived as performing both leadership-change and inspection-regulation role activites. Although there is general agreement among the total respondent sample that the SDVE performs both kinds of activities, there are pronounced differences between and among respondent sub-groupings as to the emphasis placed on these activities. In general, the SDVE perceives that it performs more of both leadership and regulation activities than other respondent groups--except the State Board of Education and Legislator groups--perceive that the SDVE is performing. Respondents representing local schools, area schools, and higher education generally indicate lower perceptions for the SDVE performance of leadership and regulatory activities than do other groups.

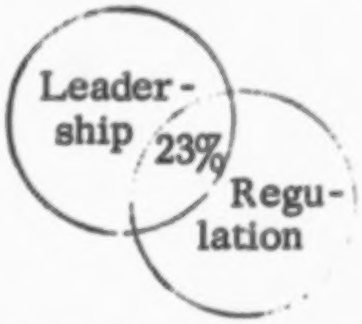
Respondent perceptions of the ideal SDVE role suggest that respondents see the ideal SDVE as performing leadership and regulation activities, but at a higher level than it presently is perceived as performing them. Respondents also indicate that they believe that the SDVE should involve groups and agencies to a greater extent in such activities as planning, policy formulating, setting goals for vocational education, and others. The SDVE itself perceives that it should be more actively engaging in both regulatory and leadership activities, but the SDVE perceived need for such change--as indicated by mean cluster difference scores--is less than most other respondent groups.

Leadership, regulation, and involvement are not seen by respondents as discrete activities, but rather as continuous and interrelated variables. This relationship is demonstrated by the correlation between and among the dimensions of (actual and ideal) leadership, regulation, and involvement. The amount of common variance, i.e., overlap, between any two dimensions of (actual or ideal) leadership, regulation, and involvement is equal to the square of the correlation between the dimensions. Such relationships can be diagrammatically portrayed as follows:

Actual



Ideal



In this relationship, the actual leadership activity and the actual regulatory activity overlap is about 34%, but ideally, these two activities would be somewhat more discrete.

Considering the size of both sample groups (N=905, N=878) and the fact that the same kinds of respondents were invited to participate in the data-collection session within each sample, there were some striking differences in responses between the groups. It might be that these differences can be explained in one (or more) of the following ways:

1. Regional differences. For example, group (N=905) includes 2 Southern states; group (N=878) includes 9 Southern states.

2. State Size (population). E.g., group (N=905) includes (of the ten largest states) those ranked 5, 8, 9 in population size in the 1960 census; group (N=878) includes states ranked 1, 2, 3 and 7.

3. State size in relation to population density. Sample group (N=905) includes six states with large area and small population; sample group (N=878) includes states ranked 1, 2, 3 and 7.

4. Urban-rural differences. It is possible that one sample group contained respondents that were more urban- or rural-oriented than the other.

5. Slight change in the Group Interview Guide. Some modifications of the Group Interview Guide changed a few items, and added or deleted an item or two from the clusters. In the last draft of the Group Interview Guide the instructions to respondents were more formal, definitions were written.

The SDVE group, and to some extent the SDE group, and the respondent group composed of state-level policy and advisory persons (State Board of Education members, State-Level Vocational Education Advisory Group members, and Legislators) produced similar response patterns. In the same manner, the SDVE group and the respondent groups composed of other educators (representatives from local schools, area schools and higher education) are often dissimilar in their response patterns. This might indicate that SDVE persons think and react differently from other professional educators, and, in fact, are more similar to the policy and advisory groups than to the educators in thoughts about education, where the groups differ.

The above generalizations and results of other analyses of the data evoke two areas for further generalization and speculation. It may be that the "facts of life" in the state education complex are such that state-level educators become oriented more as "politicians" than as professional educators. Their reference groups may be other government employees and agencies and their own policy and advisory groups. State education programs depend to a large degree for their success and continuation upon approval by legislative bodies and advisory groups. State governments expect--and have every right to expect--state educational administration to superintend carefully the ever-increasing education funds. Furthermore, state legislative and policy bodies often mandate changes for the state educational administrators to implement. The ability to get educational things done at the state level may depend upon the ability to influence fiscal officers, legislators, or state educational policy groups. It may not be so surprising, then, to find that the responses of state educational administrators are most similar to the state-level policy and advisory group responses.

It may also be that state education administrators experience conflicting role expectations from at least two sides--the expectation for regulation from State administrators, policy groups and legislators, and the expectation for strong, viable educational leadership and direction from professional educators. Indeed, the problems attendant with being a professional person employed in a governmental bureaucracy may offer fertile grounds for future role and role conflict research. Education, because of its predominantly state orientation may be a productive place to initiate such research.

6. Conclusions

There was some apprehension before data gathering began--apprehension that suspicion, defensiveness or hesitancy on the part of the states would seriously inhibit data collection for the Project.

The staff, of course, made every effort to avoid misunderstanding, to avoid placing undue burden upon the respondents, to avoid revealing any information which may have violated a confidence or which conceivably might be embarrassing.

Virtually without exception, those staff responsible for gathering data were deeply impressed with the hospitable and cooperative reception given by each of the 41 states involved in the process. Most importantly, the study resulted in widening some of the communication channels.

The role of the SDVE, which in the past may have been primarily compliance checking-inspection-regulation and secondarily change-leadership, may now need to emphasize, and be expected to emphasize, the change-leadership aspect and diminish the supervision-inspection-regulation aspect.

The people with whom the SDVE interacts may or may not perceive the SDVE in the same or similar ways. In like manner, these people may hold differing perceptions of what the SDVE should be or should do.

Social changes are demanding that the SDVE maintain or develop strong dynamic leadership and viable relationships with the local school districts. Sweeping changes in our social and technological foundations may cause perceptions of what the SDVE should do to change rapidly. The SDVE, to perform its function most effectively, must be aware of the way other people view it, of perceptions and expectations held for it.

Research done within the concept of role and role analysis has provided growing awareness of the importance of role concept in education. In general, role studies have indicated that when those concerned differ in their perceptions of what a role is or should be, conflicts and a decrease in effectiveness and efficiency may result.

Limitations

This sub-unit of the study was characterized by several limitations. The study concentrated upon the SDVE and was not involved directly with other aspects of education.

A. Limitations

1. Although there were respondents from various areas in each state, many were from the state capitol or nearby communities.
2. Some subgroup samples were small and had to be combined, thus losing some potential ways to analyze the data.
3. Data were limited by the scope of the instrumentation. There is no assurance that all of the most significant aspects of the myriad of actual and ideal activities of the SDVE were included on the instrument.
4. The study followed ex post facto design. *

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* This is not meant as a condemnation of ex post facto research, but rather to call the reader's attention to the fact that this study did not follow the true experimental research design. For a concise treatment of the strengths as well as limitations of ex post facto research and the differences between ex post facto and experimental research, see Fred N. Kerlinger, Foundations of Behavioral Research, (New York: Holt, Rinehart and Winston, Inc., 1964), pp. 359-373.

5. There were problems in measuring such variables as leadership and change; some indirect inferences were made.

B. Some limitations were imposed by the scope of the study.

1. State constitutions, statutes, customs, and administrative regulations differ.
2. Organization for vocational education differs among states.
3. Data collection covered ten months. Significant changes may have occurred during that time.
4. Depth may have been sacrificed because of the scope of the study.
5. This study sub-unit was a component of a more comprehensive study and was conducted within a framework designed to accommodate several other sub-unit studies. *

7. Summary

The State Division of Vocational Education (SDVE) is responsible for one segment of education--one which has been subject to strong criticism. New emphasis on state education agencies has precipitated a need for reassessment and strengthening of these agencies. Is the SDVE role adjusting to the emerging needs of a rapidly changing society? Is the emphasis of SDVE activity shifting from inspection and regulation to leadership and change?

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* Although listed as a limitation, this arrangement was useful. Staff working on the other studies helped plan this study, collect data, and consult on the analysis.

The purpose of this field study was to assess respondent perceptions of (1) what is, and (2) what should be the role of the SDVE in the state-level administration of vocational-technical education. This field study followed ex post facto research design and was exploratory in the sense that it was an attempt to seek information about existing situations and to probe relationships. One limitation of such a field study is the sacrifice of depth for breadth. Indeed, there were many more variables and relationships in the study that might have been explored and tested than were actually used.

Objectives

One task of this study was to design, field test, and eventually use for data collection an instrument to obtain perceptions of "what is" and "what should be" the role of the SDVE. Assumptions supported in the literature provided a framework for the development of the data collection instrument. The Group Interview Guide attached to this report* was the result of the instrument development process. A purposefully selected sample responded to the Group Interview Guide in each state visited for the purpose of data collection. The Group Interview Guide was not mailed to the sample, but respondents were invited to attend a data-gathering meeting which included several large group presentations as well as small group sessions where a Project staff member administered the Group Interview

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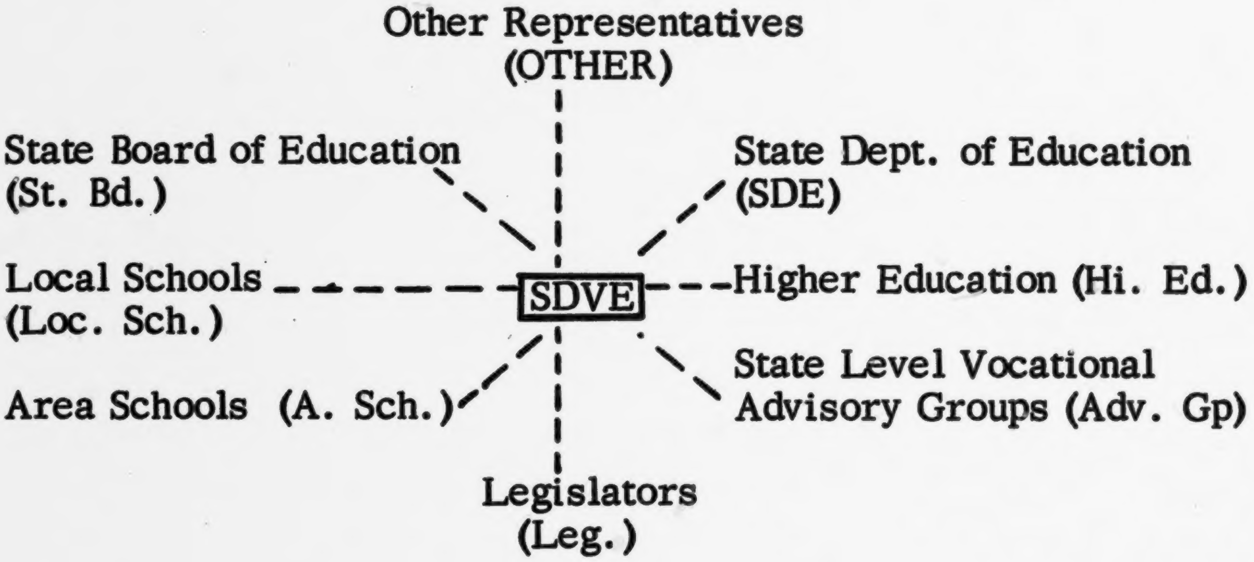
* See Appendix IV, M. A more complete report of the development of the Group Interview Guide is contained in the Final Report for Project Number 5-8466, Contract Number OE-6-85-079: "Identification and Development of Instruments for a Study of the Expectations and Perceptions of the State Vocational-Technical Education Agencies and Their Influence Upon Local Programs", United States Department of Health, Education, and Welfare, Office of Education, Bureau of Research, January, 1967.

Guide in person to the sample.*

The SDVE, as the focus of the study, was thought of as one organization within the total state educational system, and as performing a specific and definable function for that total system. This role or function was explored in terms of perceptions of "what is" and "what should be" held by persons from groups and agencies having contact or reason to interact with the SDVE. The SDVE role was also studied from the point of view of SDVE members themselves. Respondent groups believed to be clients or part of a client system for the SDVE were used as the sample in this study. In part, these groups were: The State Division of Vocational Education (SDVE), The State Department of Education--excluding the SDVE (SDE), Local Schools, (Loc. Sch.), Area Schools (Ar. Sch.), Higher Education (Hi. Ed.), State Board of Education (and Vocational Education) members (St. Bd.), State Level Vocational Education Advisory Committed Members (Adv. Gp.), Legislators (Leg.) and Other respondents representing business, agriculture, etc. (OTHER). This client system is diagrammed below.


Other Representatives
(OTHER)
State Board of Education
(St. Bd.)
State Dept. of Education
(SDE)
Local Schools
(Loc. Sch.)
SDVE
Higher Education (Hi. Ed.)
Area Schools (A. Sch.)
State Level Vocational
Advisory Groups (Adv. Gp)
Legislators
(Leg.)

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* Some minor modifications were made in the Group Interview Guide after some data-collection visits. This necessitated dual reporting of some data in the project report. This summary includes general comments for all data. For specifics, the reader is advised to refer to the total report.

Hypotheses

Stated in general terms, the problem of this study was to analyze selected respondents' perceptions of what "is" and of what "should be" in terms of the SDVE role. This problem was studied in terms of intergroup responses and consensus on selected items and groups of items relating to (1) perceptions of the SDVE (a "does" dimension) and (2) expectations for the SDVE (a "should" dimension). The SDVE role was hypothesized as represented by a continuum from inspection-regulation to leadership-change. Involvement of educators and other influential groups and agencies by the SDVE was seen as one dimension of leadership-change activities. The following questions were examined:

1. How is the SDVE viewed in respect to the dimensions of inspection-regulation and leadership-change?
2. What are the perceived actual and ideal role(s) of the SDVE as expressed by respondents?
    - (a) What are the respondents' perceptions of the actual SDVE role?
    - (b) What are the respondents' perceptions of the ideal SDVE role?
    - (c) What are the similarities or differences between perceptions of the actual and ideal SDVE role?
3. What are the relationships between the dimensions of leadership-change, inspection-regulation, and involvement (actual and ideal)?

Some general null hypotheses were developed for testing and analysis.

H_o1 There are no differences among response frequencies of respondent groups in their responses to items representing the (actual and ideal) leadership, regulation, and involvement dimensions of the SDVE role.

H_o2 Mean scores among respondent groups on the (actual and ideal) leadership, regulation, and involvement clusters do not differ.

H_o3 There are no differences between response frequencies of a respondent group in responses to the actual and ideal dimensions of the same item.

H_o4 Mean scores among respondent groups on leadership, regulation, and involvement cluster difference scores do not differ.

H_o5 There are no differences among response frequencies of respondent groups in their responses to items relating to attitudes or opinions about questions and issues in education.

H_o6 Mean scores obtained by respondent groups on an item cluster score indicating attitude about vocational education do not differ.

H_o7 Mean cluster scores among legislator, state board of education, and state vocational education advisory council groups (i.e., state level policy and advisory groups) do not differ.

H_o8 Mean cluster scores of respondents representing local schools, area schools, and higher education do not differ.

H_o9 Mean cluster scores of the SDVE group do not differ from mean cluster scores of other educator groups as represented by respondents from local schools, area schools, and higher education.

H_o10 Mean scores among the SDVE group, the state board of education, legislator, and state vocational education advisory council groups (state level policy and advisory groups), do not differ.

H_o11 Mean scores among state level policy and advisory groups (I.e., legislators, state board of education members, and state vocational education advisory council members) and respondents from respondent group "other" (i.e., representatives of business, labor, etc.) do not differ.

Method

Analyses utilizing both single items and clusters of items were performed; the nonparametric chi-square test was used in analysis of single items, analyses of variance were used for analysis of clusters of items, and Pearson Product Moment Correlations were developed among scores to clusters of items.

Clusters of items which could be treated as units were designated _a priori_ and tested. As a result, seven basic item clusters conforming to major areas of interest in this study were developed.*

1. Present degree of SDVE leadership function (Actual)
2. Ideal degree of SDVE leadership function (Ideal)
3. Present degree of SDVE regulation function (Actual)
4. Ideal degree of SDVE regulation function (Ideal)
5. Attitude toward Vocational-Technical Education
6. Present degree of SDVE involvement function (Actual)
7. Ideal degree of SDVE involvement function (Ideal)

Using data from five states (N=226) a trial scoring key for each cluster was developed and a total score for each respondent on each cluster was found. The median interval in each cluster was determined from a frequency distribution and the cluster was dichotomized. Chi-square contingency tables were generated for each item. On the basis of pilot analyses, the clusters were revised and the item scoring key was corrected for dichotomous scoring.+

Scores representing differences between similar clusters were obtained by subtracting (for item stems common to each cluster, but different in terms of the does-should dimension) a respondent's "does" score from his "should" score on each item. These differences were totaled and a constant, 1, was added to each score to circumvent negative numbers.‡

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*Using the same procedure a "does" and "should" score for each respondent was developed for items on Section IV of the Group Interview Guide.

+A respondent's actual score was computed as $\Sigma (1) / \Sigma (1 + 0)$.

‡Cluster difference scores were developed as $\Sigma (\text{Should-Does} \quad / N + 1$.

Highlights

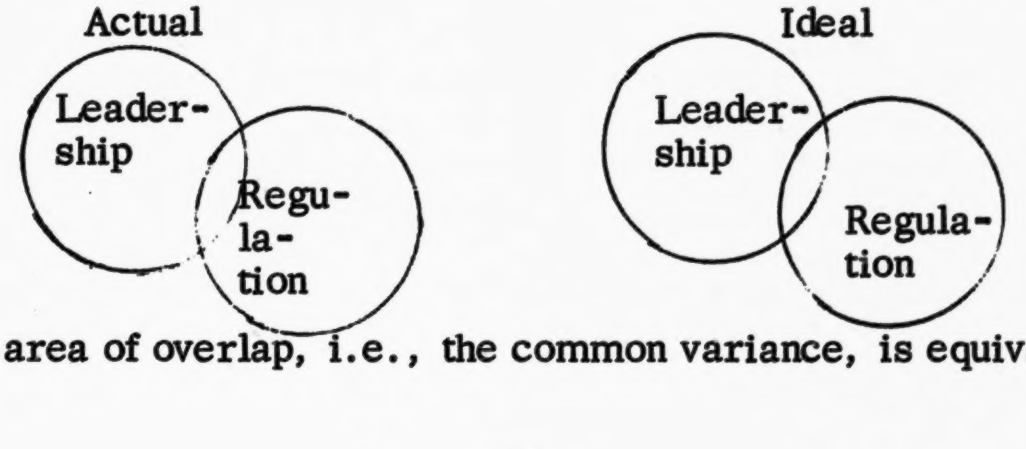
Cluster reliability coefficients were computed using the Kuder-Richardson Formula number 20. The majority of the reliability coefficients fell between .95 and .80.

Through analysis of variance, it was demonstrated that there were no significant differences among responses of representatives of the Adv. Gp., Leg. and St. Bd. groups. These three categories were combined for some analyses and referred to as a state-level advisory and policy group (Adv.).

Analyses of variance using major respondent groupings diagrammed above--including the combination group described in the previous paragraph--indicated that there were significant differences (at or beyond the .05 level of significance) among respondent group scores obtained on the basic item clusters and on the difference clusters.

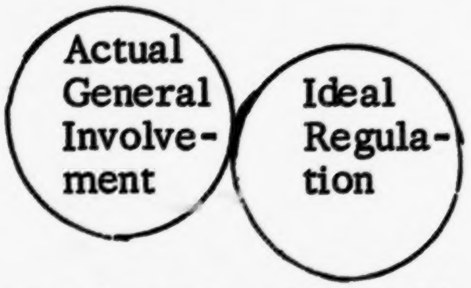
Other analyses of variance demonstrated that there were no significant differences among the responses of representatives of local schools, area schools and higher education, suggesting that the level or location or employment of such educators does not determine their responses to clusters of items as described in this study. However, when SDVE group was included in an analysis of variance along with the three other educator groups mentioned above, significant F values were obtained. These analyses, coupled with inspection of the group mean scores, suggest that the variance is between the SDVE and the other educator groups, and not among the educator groups.

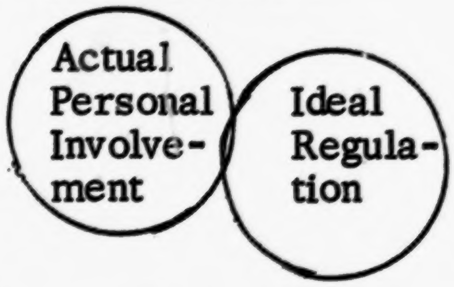
A thirteen by thirteen Pearson Product Moment Correlation Matrix of cluster scores was generated. The relatively strong correlations between actual and ideal leadership and regulation obtained in this study may indicate that neither the leadership function nor the regulation function is seen as something discrete, but that they overlap.



Where the area of overlap, i.e., the common variance, is equivalent to the square of the correlation between the dimensions of leadership and regulation, or about 34 percent (actual) and 23 percent (ideal).

On the other hand, there are relatively weak relationships bwtween actual involvement (general and personal) and ideal regulation. This seems to indicate that those people who perceive that there is involvement, or that they are involved, in SDVE activities indicate that there should be minimum emphasis upon regulation.





Strong inverse relationships (ranging from -.83 to -.64) were obtained between actual leadership and leadership difference, between actual involvement and involvement difference.

This would indicate that those groups with high actual leadership, regulation and involvement scores obtained low leadership, regulation and involvement difference scores. In general, low difference scores can be interpreted to mean satisfaction with the status quo and not much perceived need for change. The SDVE group produced generally higher scores than other groups except state-level policy and advisory groups on (actual and ideal) leadership, regulation and involvement, and generally lower scores than other groups on clusters representing the differences between the actual and ideal dimensions of these same measures. Relative to other groups, representatives of local schools, area schools and higher education generally obtained relatively lower scores on actual leadership, regulation and involvement clusters and higher scores on the difference clusters.

Chi-square tests using the major respondent groupings were performed on single items from the Group Interview Guide. Significant chi-square values (at or beyond the .05 level) were obtained on 215 of 279 items tested. Response frequencies of the respondent groups differ or the majority of items included on the Group Interview Guide.

Chi-square tests for differences in response frequencies of a single group's "does" and "should" responses for the same item stem indicated that there were significant differences in these response at or beyond the .05 level of significance. Nonsignificant differences were found on only 31 of the 208 chi-square tests. Each nonsignificant chi-square value was obtained on an item classified as regulatory. This would seem to indicate that although there is a perceived need for more leadership activity, there is less change perceived for the regulation function.

There was an observable trend for the consensus of responses on the "should" items to be one or more places "higher" on the scale of performance than the consensus of responses to the "does" items.

	Does	Should
Almost always		
Frequently		80%
Occasionally	60%	
Seldom		
Almost never		

There was also a consistent trend for items relating to perceptions of "what is"("does" items) to elicit lower consensus than "should" items. Compare the percents of responses in the above diagram for an example of this phenomenon. This trend was reflected in the standard deviations of the cluster scores wherein the clusters relating to the "actual" dimensions produced larger standard deviations than clusters relating to the "ideal" dimensions. In the same manner, items relating to leadership produced higher levels of consensus than items relating to regulation. The following figure demonstrates these differences in consensus for items from Sections II and VII of the Group Interview Guide, selected for the leadership and regulation clusters. The "does" and "should" percents are computed on all items, and not by categories of leadership or regulation.

	Percent Consensus	
Kind of Item	SDVE	Total
Leadership	81	76
Regulation	71	65
"Does"	68	59
"Should"	85	82

8. Discussion of Results from Analysis of Selected Items from the Group Interview Guide

In addition to analysis of clusters of items from the Group Interview Guide as developed in the first phase of this study of perceptions, individual items were selected for further scrutiny.

Significant differences (as tested by chi-square technique) were found between the SDVE and other groups on several of the items. Percentage comparisons and significant differences between groups are illustrated on the following tables. Also, percentage comparisons between groups, indicating a high percentage (90-100%) of agreement are shown.

Results of analysis of group responses to both the written instrument and the individual interview provide valuable insights into the dynamics of relationships between the SDVE and its "client" population.

Patterns of Agreement and Disagreement Between State Divisions of Vocational Education and Local School Personnel

Table 1A summarizes ten (10) items from the Group Interview Guide on which significant differences between the responses of these two groups were found. These items elicited attitudes and perceptions about (1) the status and/or place of vocational education in the public school curriculum; (2) the appropriate role of vocational education in the high school program; (3) the present quality, availability and scope of vocational education; and (4) the role of lay citizens in decision-making for public education. The greatest amount of disagreement was found in responses to items 15, 19, 39, 2-A and 3-A.

On the other hand, agreement between these two groups was high concerning the ideal role of the SDVE in promoting excellence in vocational education and in achieving integration of vocational education into the total education program. Table I-B summarizes those items from the Group Interview Guide, indicating a high level of consensus (90-100% agreement) between the two groups.

TABLE I-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories between State Divisions of Vocational Education and Local School Representatives.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(3) High school vocational education decreases the probability of students' meeting college entrance requirements						
State Divisions of Vocational Education	8	32	9	36	12	2
Local School Representatives*	13	40	7	30	7	4
(13) Vocational education is designed primarily for students not adapted for success in general education						
State Divisions of Vocational Education	2	9	2	33	54	1
Local School Representatives**	3	16	4	38	39	0
(15) High schools are primarily concerned with preparing students for college						
State Divisions of Vocational Education	35	54	1	6	4	1
Local School Representatives**	27	45	1	20	7	0
(19) Vocational education needs drastic change for improvement						
State Divisions of Vocational Education	9	37	11	38	3	2
Local School Representatives**	16	44	15	20	1	4

Legend: SA = Strongly Agree; A= Agree; U = Uncertain; D= Disagree; SD = Strongly Disagree; NR = No Response.
 * = .05 Level of Significance
** = .01 Level of Significance

TABLE I-A (continued)

	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(25) State-level implementation of recent Federal vocational acts adequately meets the intent of the legislation						
State Divisions of Vocational Education	4	43	22	23	7	3
Local School Representatives**	3	25	34	28	6	4
(30) High school vocational courses are more exploratory than vocational in nature						
State Divisions of Vocational Education	4	30	10	45	8	3
Local School Representatives**	8	42	8	34	4	4
(39) The increasing complexity of education and the attendant challenges for understanding warrant less and less involvement of lay citizens in decision-making						
State Divisions of Vocational Education	2	8	3	56	31	1
Local School Representatives**	2	20	6	47	24	1
(44) Existing Federal acts set vocational education apart from general education, creating an undesirable dual system						
State Divisions of Vocational Education	5	19	15	47	11	2
Local School Representatives**	13	33	15	34	5	0
(2-A) High school guidance personnel tend to direct students toward liberal arts college preparatory courses						
State Divisions of Vocational Education	51	40	3	2	1	4
Local School Representatives**	28	47	4	13	2	6

TABLE I-A (continued)

Items	Percentages in Each Response Category					
	SD	A	U	D	SD	NR
(3-A) Administrators and nonvocational teachers believe that excellence is possible in vocational education						
State Division of Vocational Education	3	21	25	40	11	1
Local School Representatives**	7	37	17	33	6	0

TABLE I-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and Local School Representatives.

Item	Response Category
Section I:	
9. "The state agency (Division) for vocational-technical education should be an integral part of the State Department of Education."	Agree
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree
27. "There is need to devote greater emphasis to designing new programs and revising old ones."	Agree
Section II:	
21-S. "How frequently should the Division promote unity and balance between general and vocational education?"	Frequently to almost always
Section III:	
1. "How important is it for the Division to identify problems or obstacles which hinder the achievement of goals?"	Of extreme importance

Patterns of Agreement and Disagreement Between State Divisions of Vocational Education and Area Vocational School and and Community College Personnel

Five of the items from the Group Interview Guide showing significantly different sets of responses from these two groups are summarized in Table II-A. Divergence in attitudes and perceptions were expressed concerning: (1) the appropriate level (secondary or post-secondary) for instructional programs in vocational education; (2) the level of quality of present programs in and teachers of vocational education; (3) the inhibiting effects upon students of high school vocational education upon meeting college entrance requirements; and (4) the role of the SDVE in promoting vocational education.

As indicated in Table II-A, the opposing response patterns of each group were similar for each item. On almost every item, approximately 50% of the responses of the SDVE group fell into diametrically opposite response categories to about 50% of the responses of the other group.

Table II-B summarizes the four items which indicated a high (90-100%) level of agreement between the two groups. As with local school representatives, area vocational school and community college personnel tended to agree with the SDVE group concerning the ideal role of the SDVE and that excellence is equally possible in both vocational and general education. Both groups agreed that high school guidance personnel tend to direct students toward liberal arts college preparatory courses.

TABLE II-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories between State Divisions of Vocational Education and Area Vocational School and Community College Representatives.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(3) High school vocational education decreases the probability of students' meeting college entrance requirements						
State Divisions of Vocational Education	8	32	9	36	12	2
Area Schools and Community College Representatives**	19	37	8	25	7	3
(14) Certification requirements for vocational teachers are outmoded						
State Divisions of Vocational Education	7	33	15	34	9	2
Area Schools and Community College Representatives**	19	33	15	26	3	3
(19) Vocational education needs drastic change for improvement						
State Divisions of Vocational Education	9	37	11	38	3	2
Area Schools and Community College Representatives**	23	37	8	26	3	3
(1-A) Students should be encouraged to emphasize general education through grade 12, reserving vocational training for grades 13 and later.						
State Divisions of Vocational Education	4	9	5	30	52	1
Area Schools and Community College Representatives**	17	17	10	31	24	0

Legend: SA = Strongly Agree; A = Agree; U = Uncertain; D = Disagree; SD = Strongly Disagree; NR = No Response.
* = .05 Level of Significance; ** = .01 Level of Significance

TABLE II-A (continued)

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(5-A) The Division exerts adequate efforts to make the vocational field appealing						
State Divisions of Vocational Education	9	40	12	30	2	9
Area School and Community College Representatives*	6	23	16	50	1	4

TABLE II-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and Area Schools, Community and Junior Colleges.

Items	Response Category
Section I:	
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree
Section II:	
2-S: "How frequently should the Division work cooperately with teacher education institutions?"	Frequently to almost always
21-S. "How frequently should the Division promote unity and balance between general and vocational education?"	Frequently to almost always
Addendum:	
2-A: "High school guidance personnel tend to direct students toward liberal arts college preparatory courses."	Agree

Patterns of Agreement and Disagreement Between State Divisions of Vocational Education and Higher Education Representatives

Table III-A summarizes the responses to nine (9) items from the Group Interview Guide which indicated significant disagreement between the two groups. Unlike the other groups of educators (local school, area vocational schools, and community college), over twice as many representatives of higher education indicated that they perceived appreciable discrimination in vocational education based upon sex, age, and race than did the SDVE group.

The representatives of Higher Education responded in a similar pattern to that of the other educational groups concerning the (1) quality and scope of vocational education and (2) the tendency of setting vocational education apart from general education.

Both groups indicated a high level of consensus in their responses to six items from the Group Interview Guide as summarized on Table III-B.

TABLE III-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories Between State Divisions of Vocational Education and Representatives of Higher Education.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(25) State-level implementation of recent Federal vocational acts adequately meets the intent of the legislation						
State Divisions of Vocational Education	4	43	22	23	7	3
Representatives of Higher Education	2	20	24	41	11	2
(40-a) There is appreciable discrimination in vocational education based upon sex						
State Divisions of Vocational Education	6	31	8	41	13	1
Representatives of Higher Education	8	46	8	30	5	2
(40-b) There is appreciable discrimination in vocational education based upon age						
State Divisions of Vocational Education	2	20	10	50	17	1
Representatives of Higher Education**	4	31	13	44	5	2

Legend: SA = Strongly Agree; A = Agree; U = Uncertain;
D = Disagree; SD = Strongly Disagree; NR = No Response
* = .05 Level of Significance
** = .01 Level of Significance

TABLE III-A (continued)

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(40-d) There is appreciable discrimination in vocational education based upon race.						
State Divisions of Vocational Education	1	9	5	46	37	2
Representatives of Higher Education**	6	15	14	39	23	2
(44) Existing Federal acts set vocational education apart from general education, creating an undesirable dual system						
State Divisions of Vocational Education	5	19	15	47	11	2
Representatives of Higher Education*	8	36	12	33	10	2
(48) The public should not fear Federal control of education						
State Divisions of Vocational Education	16	29	11	28	14	1
Representatives of Higher Education*	29	34	10	17	9	1
(1-A) Students should be encouraged to emphasize general education through grade 12, reserving vocational training for grades 13 and later						
State Divisions of Vocational Education	4	9	5	30	52	1

TABLE III-A (continued)

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
Representatives of Higher Education**	7	24	7	40	21	0
(5-A) The Division exerts adequate efforts to make the vocational field appealing						
State Divisions of Vocational Education	9	40	12	30	2	9
Representatives of Higher Education**	1	29	19	37	6	8

Item	Percentages in Each Response Category					
	AA	F	O	S	AN	NR
(21-D) How frequently does the Division promote unity and balance between general and vocational education?						
State Divisions of Vocational Education	15	34	30	14	4	3
Representatives of Higher Education	9	21	39	14	8	8

Legend: AA = Almost Always; F = Frequently; O = Occasionally; S = Seldom; AN = Almost Never; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE III-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and Higher Education Representatives.

Items	Response Category
Section I:	
9. "The state agency (Division) for vocational-technical education should be an integral part of the State Department of Education."	Agree
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree
Section II:	
2-S. "How frequently should the Division work cooperatively with teacher education institutions?"	Frequently to almost always
21-S. "How frequently should the Division promote unity and balance between general and vocational education?"	Frequently to almost always
Section III:	
1. "How important is it for the Division to identify problems or obstacles which hinder the achievement of goals?"	Of extreme importance
Addendum:	
2-A. "High school guidance personnel tend to direct students toward liberal arts college preparatory courses."	Agree

Patterns of Agreement and Disagreement Between State Divisions of Vocational Education and Representatives of Chambers of Commerce, Management, Labor and Agriculture

Table IV-A summarizes the responses to five items which significantly differentiated between the two groups. The lay groups tended to be more uncertain in their responses, especially to items 25, 44 and 2-A, than did the SDVE personnel.

There were only two items from the Group Interview Guide which indicated a high level of consensus between the two groups.

TABLE IV-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories Between the State Divisions of Vocational Education and Representatives of the Chamber of Commerce, Management, Labor and Agriculture (Lay Persons).

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(3) High school vocational education decreases the probability of students' meeting college entrance requirements						
State Divisions of Vocational Education	8	32	9	36	12	2
Lay Persons**	7	50	10	25	3	4
(25) State-level implementation of recent Federal vocational acts adequately meets the intent of the legislation						
State Divisions of Vocational Education	4	43	22	23	7	3
Lay Persons**	0	22	43	29	3	4
(44) Existing Federal acts set vocational education apart from general education, creating an undesirable dual system						

Legend: SA = Strongly Agree; A = Agree; U = Uncertain; D = Disagree; SD = Strongly Disagree; NR = No Response
* = .05 Level of Significance
** = .01 Level of Significance

TABLE IV-A (continued)

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(44) State Divisions of Vocational Education	5	19	15	47	11	2
Lay Persons**	3	26	28	31	0	2
(1-A) Students should be encouraged to emphasize general education through grade 12, reserving vocational training for grades 13 and later						
State Divisions of Vocational Education	4	9	5	30	52	1
Lay Persons**	12	18	7	42	21	0
(5-A) The Division exerts adequate efforts to make the vocational field appealing						
State Divisions of Vocational Education	9	40	12	30	2	9
Lay Persons**	2	23	30	30	4	12

TABLE IV-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and Chambers of Commerce, Management, Labor, and Agriculture.

Items	Response Category
Section I: 20: "Achievement of excellence is equally possible in both general and vocational education."	Agree
Section III: 1: "How important is it for the Division to identify problems or obstacles which hinder the achievement of goals?"	Of Extreme Importance

Patterns of Agreement and Disagreement Between State Divisions of Vocational Education and State Departments of Education (excluding SDVE)

Thirteen (13) items from the Group Interview Guide significantly differentiated between these two groups. The proportion of disagreement in responses was in the magnitude of two to one for almost all items. Table V-A summarizes the responses to these items by the SDVE and SDE groups. Among all the groups with which the responses of the SDVE group were compared, comparison of responses between the SDVE and SDE yielded the greatest number of significantly differentiating items.

Table V-B summarizes the three items which indicated a high level of consensus between the two groups.

TABLE V-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories Between State Divisions of Vocational Education and State Departments of Education (excl. SDVE).

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(3) High school vocational education decreases the probability of students' meeting college entrance requirements						
State Divisions of Vocational Education	8	32	9	36	12	2
State Departments of Education**	13	43	11	22	5	6
(13) Vocational education is designed primarily for students not adapted for success in general education						
State Divisions of Vocational Education	2	9	2	33	54	1
State Departments of Education**	2	20	3	46	27	1
(15) High schools are primarily concerned with preparing students for college						
State Divisions of Vocational Education	35	54	1	6	4	1

Legend: SA = Strongly Agree; A = Agree; U = Uncertain;
D = Disagree; SD = Strongly Disagree; NR = No Response
* = .05 Level of Significance
** = .01 Level of Significance

TABLE V-A (continued)

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(15) State Departments of Education**	17	62	1	14	5	1
(30) High school vocational courses are more exploratory than vocational in nature						
State Divisions of Vocational Education	4	30	10	45	8	3
State Departments of Education**	7	55	12	16	1	8
(36) Admission requirements for vocational programs exclude many who need the training						
State Divisions of Vocational Education	7	29	14	44	6	1
State Departments of Education**	8	36	26	27	0	3
(40-a) There is appreciable discrimination in vocational education based upon sex						
State Divisions of Vocational Education	6	31	8	41	13	1
State Departments of Education**	12	48	8	19	8	4
(40-b) There is appreciable discrimination in vocational education based upon age						
State Divisions of Vocational Education	2	20	10	50	17	1

TABLE V-A (continued)

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(40-b) State Departments of Education**	7	34	17	28	11	4
(40-d) There is appreciable discrimination in vocational education based upon race						
State Divisions of Vocational Education	1	9	5	46	37	2
State Departments of Education*	4	14	12	40	25	5
(44) Existing Federal acts set vocational education apart from general education, creating an undesirable dual system						
State Divisions of Vocational Education	5	19	15	47	11	2
State Departments of Education**	22	45	7	23	2	1
(1-A) Students should be encouraged to emphasize general education through grade 12, receiving vocational training for grades 13 and later						
State Divisions of Vocational Education	4	9	5	30	52	1
State Departments of Education**	13	13	7	46	21	1

TABLE V-A (continued)

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(2-A) High school guidance personnel tend to direct students toward liberal arts college preparatory courses						
State Divisions of Vocational Education	51	40	3	2	1	4
State Departments of Education**	21	39	4	22	1	13
(3-A) Administrators and non-vocational teachers believe that excellence is possible in vocational education						
State Divisions of Vocational Education	3	21	25	40	11	1
State Departments of Education*	4	36	22	35	1	1

Items	Percentages in Each Response Category					
	AA	F	O	S	AN	NR
(21-D) How frequently does the Division promote unity and balance between general and vocational education?						
State Divisions of Vocational Education	15	34	30	14	4	3
State Departments of Education**	5	21	35	21	5	13

Legend: AA = Almost Always; F = Frequently; O = Occasionally; S = Seldom; AN = Almost Never; NR = No Response
* = .05 Level of Significance
** = .01 Level of Significance

TABLE V-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and State Departments of Education.

Items	Response Category
Section I:	
9. "The state agency (Division) for vocational-technical education should be an integral part of the State Department of Education."	Agree
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree
Section II:	
21-S. "How frequently should the Division promote unity and balance between general and vocational education?"	Frequently to almost always

Patterns of Agreement and Disagreement Between State Divisions of Vocational Education and State Employment Security and Civil Service Personnel

A significantly greater proportion of State Employment Security and Civil Service personnel than the SDVE group felt that (1) high school courses are more exploratory than vocational in nature and (2) admission requirements for vocational programs exclude many who need the training. The groups also disagreed whether high school guidance personnel tend to direct students toward liberal arts college preparatory courses, with the employment-personnel group indicating significantly greater disagreement with the item (2-A) than did the SDVE group. Table VI-A summarizes these findings.

Table VI-B lists the three items from the Group Interview Guide which indicated a high level of consensus. It should be noted that responses from all groups compared in this study indicated consensus of these three items.

TABLE VI-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories Between State Divisions of Vocational Education and Employment Security and Civil Service Personnel.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(30) High school vocational courses are more exploratory than vocational in nature						
State Divisions of Vocational Education	4	30	10	45	8	3
Employment Security and Civil Service**	4	54	25	8	0	8
(36) Admission requirements for vocational programs exclude many who need the training						
State Divisions of Vocational Education	7	29	14	44	6	1
Employment Security and Civil Service	13	38	29	21	0	0
(2-A) High school guidance personnel tend to direct students toward liberal arts college preparatory courses						
State Divisions of Vocational Education	51	40	3	2	1	4

Legend: SA = Strongly Agree; A = Agree; U = Uncertain; D = Disagree; SD = Strongly Disagree; NR = No Response.
 * = .05 Level of Significance
** = .01 Level of Significance

TABLE VI-A (continued)

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(2-A) Employment Service and Civil Service*	12	59	6	12	6	6

Item	Percentages in Each Response Category					
	AA	F	O	S	AN	NR
(2-S) How frequently should the Division work cooperatively with teacher education institutions?						
State Divisions of Vocational Education	67	30	1	0	0	2
Employment Security and Civil Service**	33	29	13	4	0	21

Legend: AA = Almost Always; F = Frequently; O = Occasionally; S = Seldom; AN = Almost Never; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE VI-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and Employment Security-Civil Service

Item	Response Category
Section I:	
27. "There is need to devote greater emphasis to designing new programs and revising old ones."	Agree
Section III:	
1. "How important is it for the Division to identify problems or obstacles which hinder the achievement of goals?"	Of extreme importance
3. "How important is it for the Division to promote unity and balance between general and vocational education within the state?"	Of extreme importance

Patterns of Agreement and Disagreement Between State Divisions of Vocational Education and Lay Policy-Making Groups (State Boards of Education, State Legislators, and State Advisory Council Members)

Tables VII-A and VII-B, VIII-Aand VIII-B, and IX-A and IX-B summarize the responses to these groups to items from the Group Interview Guide which indicated either significant disagreement or a high level of agreement. State legislators and State Advisory Council members appeared to be more uncertain about their perceptions than did either State Board of Education members or State Division personnel. Due to the small sample of respondents in each of these policy-making groups, the findings must be viewed as exceedingly tentative.

All three groups indicated a high level of agreement with the SDVE on items 9 and 20, and two groups, in addition, agreed with the SDVE on items 21-S and III-1.

TABLE VII-A

Selected Items from the Group Interview Guide Showing Significant Differences in Response Categories Between State Divisions of Vocational Education and State Boards of Education.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(30) High school vocational courses are more exploratory than vocational in nature						
State Divisions of Vocational Education	4	30	10	45	8	3
State Boards of Education**	5	58	19	16	0	2
(35) Local districts should have the major responsibility for the nature and extent of local vocational programs						
State Divisions of Vocational Education	21	51	10	16	1	0
State Boards of Education*	12	41	12	24	12	0

Legend: SA = Strongly Agree; A = Agree; U = Uncertain; D = Disagree; SD = Strongly Disagree; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE VII-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and State Boards of Education.

Item	Response Category
Section I:	
9. "The state agency (Division) for vocational-technical education should be an integral part of the State Department of Education."	Agree
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree
Section II:	
2-S. "How frequently should the Division work cooperatively with teacher education institutions?"	Frequently to almost always
21-S. "How frequently should the Division promote unity and balance between general and vocational education?"	Frequently to almost always
Section III:	
1. "How important is it for the Division to identify problems or obstacles which hinder the achievement of goals?"	Of extreme importance

TABLE VIII-A

Selected Items from the Group Interview Guide Showing Significant Disagreement on Response Categories Between State Divisions of Vocational Education and State Legislators.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(44) Existing Federal acts set vocational education apart from general education, creating an undesirable dual system						
State Divisions of Vocational Education	5	19	15	47	11	2
State Legislators**	10	0	60	20	10	0
(48) The public should not fear Federal control of education						
State Divisions of Vocational Education	16	29	11	28	14	1
State Legislators**	0	0	20	20	60	0

Legend: SA = Strongly Agree; A = Agree; U = Uncertain; D = Disagree; SD = Strongly Disagree; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE VIII-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and State Legislators.

Item	Response Category
Section I:	
9. "The state agency (Division) for vocational technical education should be an integral part of the State Department of Education."	Agree
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree

TABLE IX-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories Between State Divisions of Vocational Education and State Advisory Councils.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(25) State-level implementation of recent Federal vocational acts adequately meets the intent of the legislation						
State Divisions of Vocational Education	4	43	22	23	7	3
State Advisory Councils**	2	31	35	27	5	1
(30) High school vocational courses are more exploratory than vocational in nature						
State Divisions of Vocational Education	4	30	10	45	8	3
State Advisory Councils**	4	49	14	30	2	1
(44) Existing Federal acts set vocational education apart from general education, creating an undesirable dual system						
State Divisions of Vocational Education	5	19	15	47	11	2
State Advisory Councils**	8	35	20	31	5	2

Legend: SA = Strongly Agree; A = Agree; U = Uncertain; D = Disagree; SD = Strongly Disagree; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE IX-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and State Vocational Advisory Council.

Item	Response Category
Section I:	
9. "The state agency (Division) for vocational-technical education should be an integral part of the State Department of Education."	Agree
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree
27. "There is need to devote greater emphasis to designing new programs and revising old ones."	Agree
Section II:	
21-S. "How frequently should the Division promote unity and balance between general and vocational education?"	Frequently to
Section III:	
1. "How important is it for the Division to identify problems or obstacles which hinder the achievement of goals?"	

Patterns of Agreement and Disagreement Between State Directors of Vocational Education and Chief State School Officers

The greatest amount of disagreement between these two groups is in their responses to items 44 and 21-D which dealt with the shism between vocational and general education. Table X-A summarizes the four items from the Group Interview Guide which significantly differentiated the two groups.

Both groups had a high level of consensus on four items as presented in Table X-B.

TABLE X-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories Between State Directors of Vocational Education and Chief State School Officers.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(15) High schools are primarily concerned with preparing students for college						
State Directors of Vocational Education	28	62	0	0	10	0
Chief State School Officers*	8	68	3	18	3	3
(44) Existing Federal acts set vocational education apart from general education, creating an undesirable dual system						
State Directors of Vocational Education	0	0	0	64	36	0
Chief State School Officers**	22	39	11	28	0	0

Legend: SA = Strongly Agree; A = Agree; U = Uncertain; D = Disagree; SD = Strongly Disagree; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE X-A (continued)

Items		Percentages in Each Response Category				
	AA	F	O	S	AN	NR
(II 2-D) How frequently **does** the Division work cooperatively with teacher education institutions?						
State Directors of Vocational Education	31	62	3	3	0	0
Chief State School Officers*	18	38	33	3	0	10
(II21-D) How frequently **does** the Division promote unity and balance between general and vocational education?						
State Directors of Vocational Education	21	55	24	0	0	0
Chief State School Officers**	5	13	38	25	8	13

Legend: AA = Almost Always; F = Frequently; O = Occasionally; S = Seldom; AN = Almost Never; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE X-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Directors of Vocational Education and Chief State School Officers.

Items	Response Category
Section I:	
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree
Section II:	
2-S: "How frequently should the Division work cooperately with teacher education institutions?"	Frequently to almost always
21-S. "How frequently should the Division promote unity and balance between general and vocational education?"	Frequently to almost always
Section III:	
1. "How important is it for the Division to identify problems or obstacles which hinder the achievement of goals?"	Of extreme importance

Patterns of Agreement and Disagreement Between State Directors of Vocational Education and State Divisions of Vocational Education (excluding the Directors)

Significant disagreement was found within the state agencies for vocational education on two items: 6 and 21-D as shown on Table XI-A. In both cases, the State Directors perceived the Division's activities more positively than did the Division staff members themselves.

A high level of agreement between the two groups was found on five items as summarized on Tables XI-B. It should be noted that these five items also elicited agreement from most of the other groups studied.

TABLE XI-A

Selected Items from Group Interview Guide Showing Significant Disagreement in Response Categories Between State Directors of Vocational Education and State Divisions of Vocational Education (excluding State Directors).

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(6) Procedures for local districts to secure state vocational funds are efficient and uncomplicated						
State Directors of Vocational Education	7	48	7	34	0	3
State Divisions of Vocational Education (excl. Directors)*	3	27	15	40	12	3

Legend: SA = Strongly Agree; A = Agree; U = Uncertain; D = Disagree; SD = Strongly Disagree; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE XI-A (continued)

Items	Percentages in Each Response Category					
	AA	F	O	S	AN	NR
(II21-D) How frequently does the Division promote unity and balance between general and vocational education?						
State Directors of Vocational Education	21	55	24	0	0	0
State Divisions of Vocational Education (excl. Directors)*	14	32	30	15	5	3

Legend: AA = Almost Always; F = Frequently; O = Occasionally; S = Seldom, AN = Almost Never; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE XI-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between State Divisions of Vocational Education and State Directors of Vocational Education.

Items	Response Category
Section I:	
27: "There is need to devote greater emphasis to designing new programs and revising old ones."	Agree
Section II:	
2-S. "How frequently should the Division work cooperatively with teacher education institutions?"	Frequently to almost always
21-S. "How frequently should the Division promote unity and balance between general and vocational education?"	Frequently to almost always
Section III:	
1. "How important is it for the Division to identify problems or obstacles which hinder the achievement of goals?"	Of extreme importance
Addendum:	
2-A. "High school guidance personnel tend to direct students toward liberal arts college preparatory courses."	Agree

Patterns of Agreement and Disagreement Between Vocational Educators and Non-Vocational Educators

Significant differences in the responses of these two groups were found for seven items from the Group Interview Guide. Their greatest disagreement concerned the status (or place) and role of vocational education in the secondary program. Table XII-A summarizes the responses of each group to the seven items.

A high level of consensus between the two groups was found on three items as shown on Table XII-B.

TABLE XII-A

Selected Items from the Group Interview Guide Showing Significant Disagreement in Response Categories Between Vocational Educators and Nonvocational Educators.

Items	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(13) Vocational education is designed primarily for students not adapted for success in general education						
All Vocational Educators	2	10	3	33	51	0
All Nonvocational Educators**	2	21	4	42	31	1
(15) High schools are primarily concerned with preparing students for college						
All Vocational Educators	37	49	2	8	4	0
All Nonvocational Educators**	21	52	2	19	6	1
(30) High school vocational courses are more exploratory than vocational in nature						
All Vocational Educators	7	31	10	42	8	3
All Nonvocational Educators**	7	51	14	21	2	5

Legend: SA = Strongly Agree; A = Agree; U = Uncertain;
D = Disagree; SD = Strongly Disagree; NR = No Response.
* = .05 Level of Significance
** = .01 Level of Significance

TABLE XII-A (continued)

	Percentages in Each Response Category					
	SA	A	U	D	SD	NR
(40-A) There is appreciable discrimination in vocational education based upon sex						
All Vocational Educators	6	35	9	36	12	2
All Nonvocational Educators**	12	48	8	25	6	2
(44) Existing Federal acts set vocational education apart from general education, creating an undesirable dual system						
All Vocational Educators	8	24	13	43	11	1
All Nonvocational Educators**	15	44	12	24	3	1
(1-A) Students should be encouraged to emphasize general education through grade 12, reserving vocational training for grades 13 and later						
All Vocational Educators	5	11	6	35	43	0
All Nonvocational Educators**	10	16	5	44	25	0
(2-A) High school guidance personnel tend to direct students toward liberal arts college preparatory courses						
All Vocational Educators	52	38	3	3	0	4
All Nonvocational Educators**	21	46	4	18	2	8

TABLE XII-B

Items from Group Interview Guide Indicating High Level of Consensus (90%-100% agreement) in Response Categories Between Nonvocational Educators and Vocational Educators.

Items	Response Category
Section I:	
9. "The state agency (Division for vocational-technical education should be an integral part of the State Department of Education."	Agree
20. "Achievement of excellence is equally possible in both general and vocational education."	Agree
Section II:	
21-S. "How frequently *should* the Division promote unity and balance between general and vocational education."	Frequently to

D. Report of Perceptions Study Based Upon Individual Interviews

Introduction and Method

This phase of the perceptions study attempted, by means of individual interviews, to probe existing patterns of relationship between State Division of Vocational Education personnel and those groups with whom they are closely associated.

A total number of 432 individual interviews were held in 38 states and Puerto Rico. In each state, interviews were held with representatives of the following groups: (1) State Division of Vocational Education, (2) State Department of Education, (3) secondary schools, area schools and higher education, (4) lay policy-making groups, and (5) other state agencies. (See Appendix IV, N. for list of Individual Interview Respondent Categories.)

The interviews followed a standard format designed to elicit free responses to questions in four major areas: the public image of the State Division of Vocational Education; the Staff of the SDVE; relationships of the SDVE with other agencies; and the quality, availability, and scope of vocational-technical education programs. (See Appendix IV, O for a copy of the Individual Interview Guide.)

A content analysis was made for each interview, utilizing a standard worksheet. (See Appendix IV, P). Time did not permit a complete interpretation of the results of these analyses. Only those items which could be assigned a quantitative score were used. A great deal of qualitative data could not be analyzed for this report due to the pressures of time.

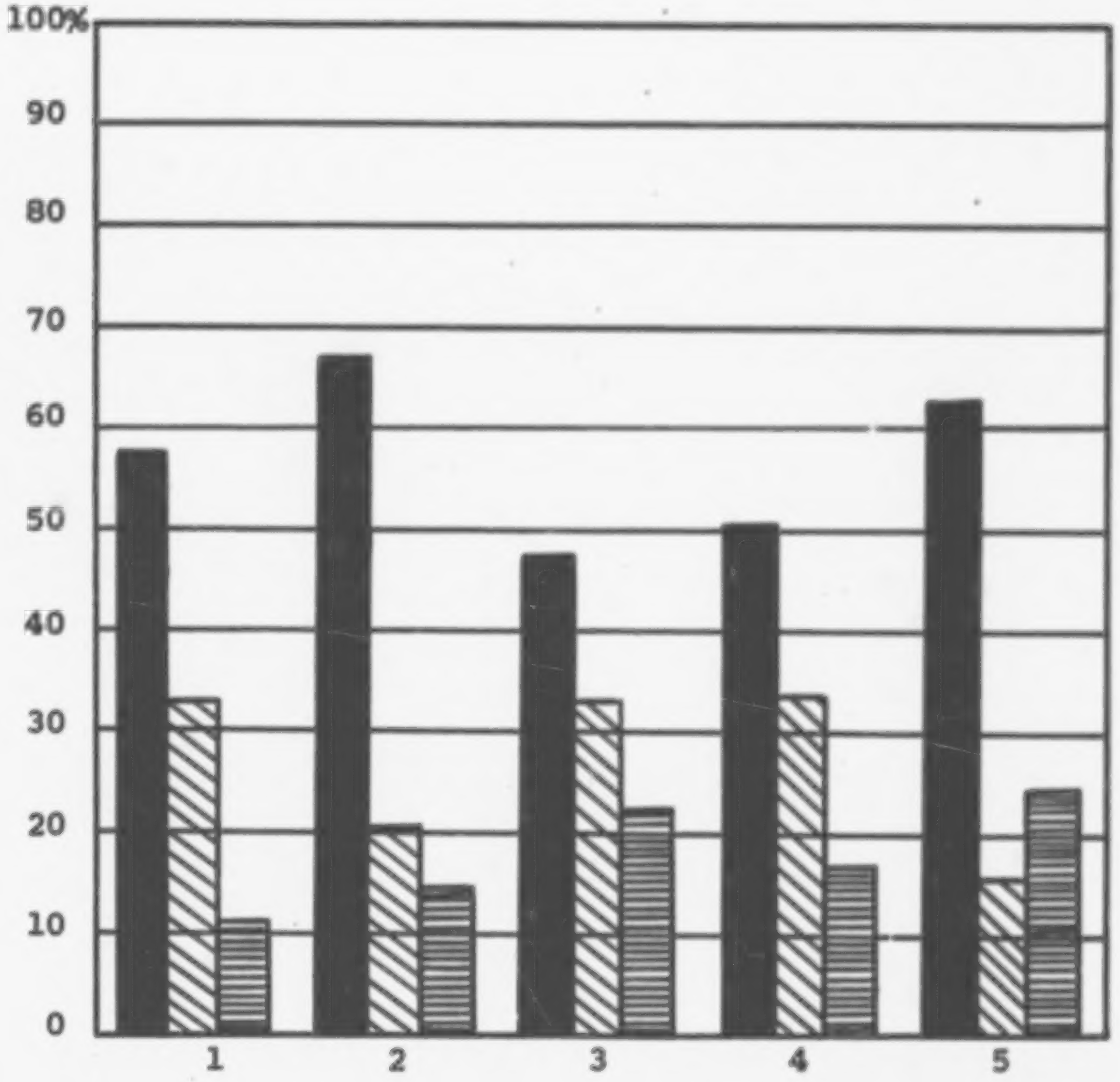
Due to the relatively few interviews in each of the five categories selected for comparison, no statistical tests of significant differences between groups were attempted.

Results

The graphs on the following pages present highlights of the results of analysis of the individual interviews. It is important to keep in mind that these findings must be considered tentative due to the limited size of sample.

Figure 1.

Perceived Quality of State
Division of Vocational Education Image

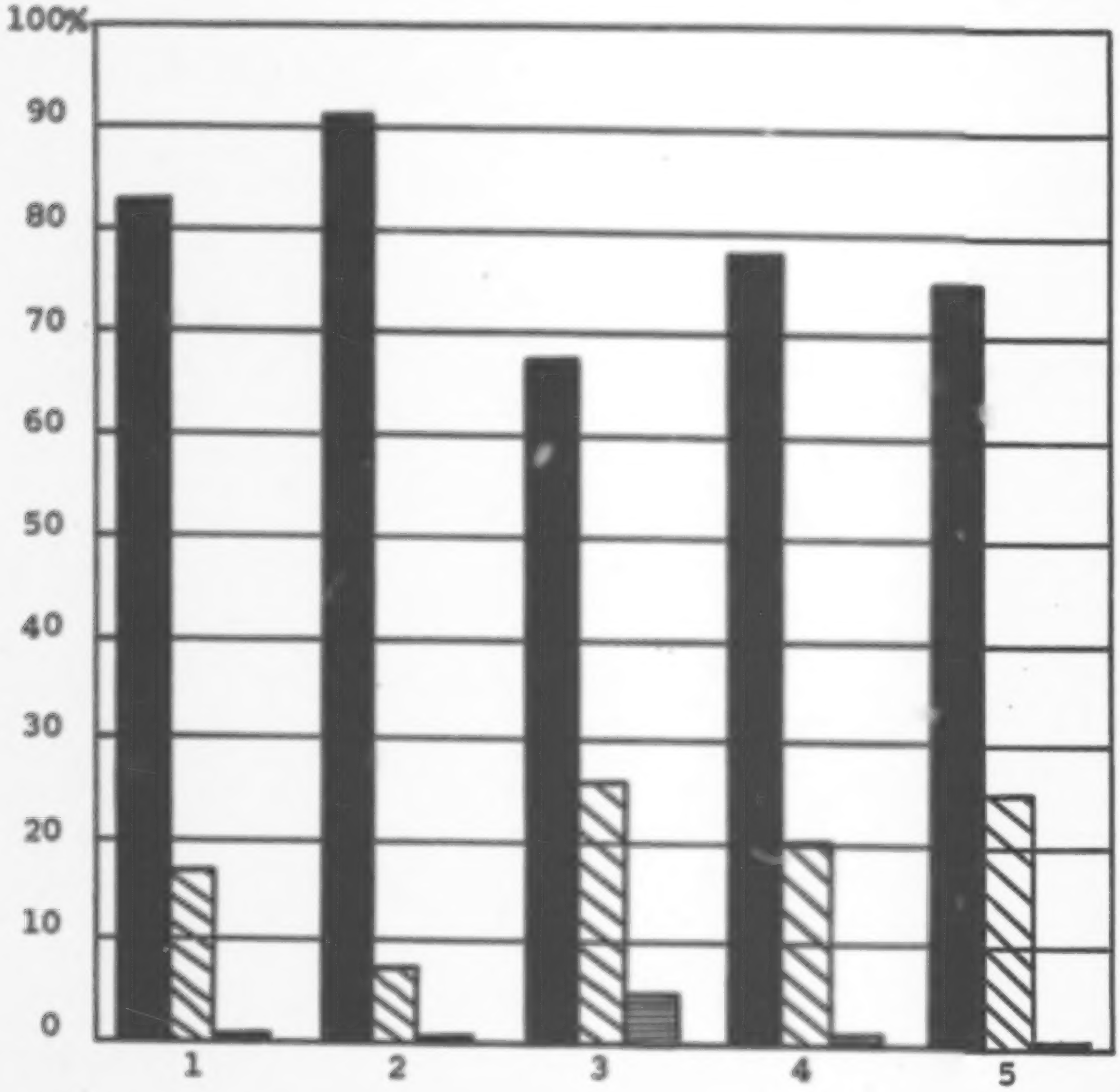


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Positive; ▧ :Mediocre; ▤ :Poor

Figure II.

Perceived Level of State Division of Vocational Education Staff Competence

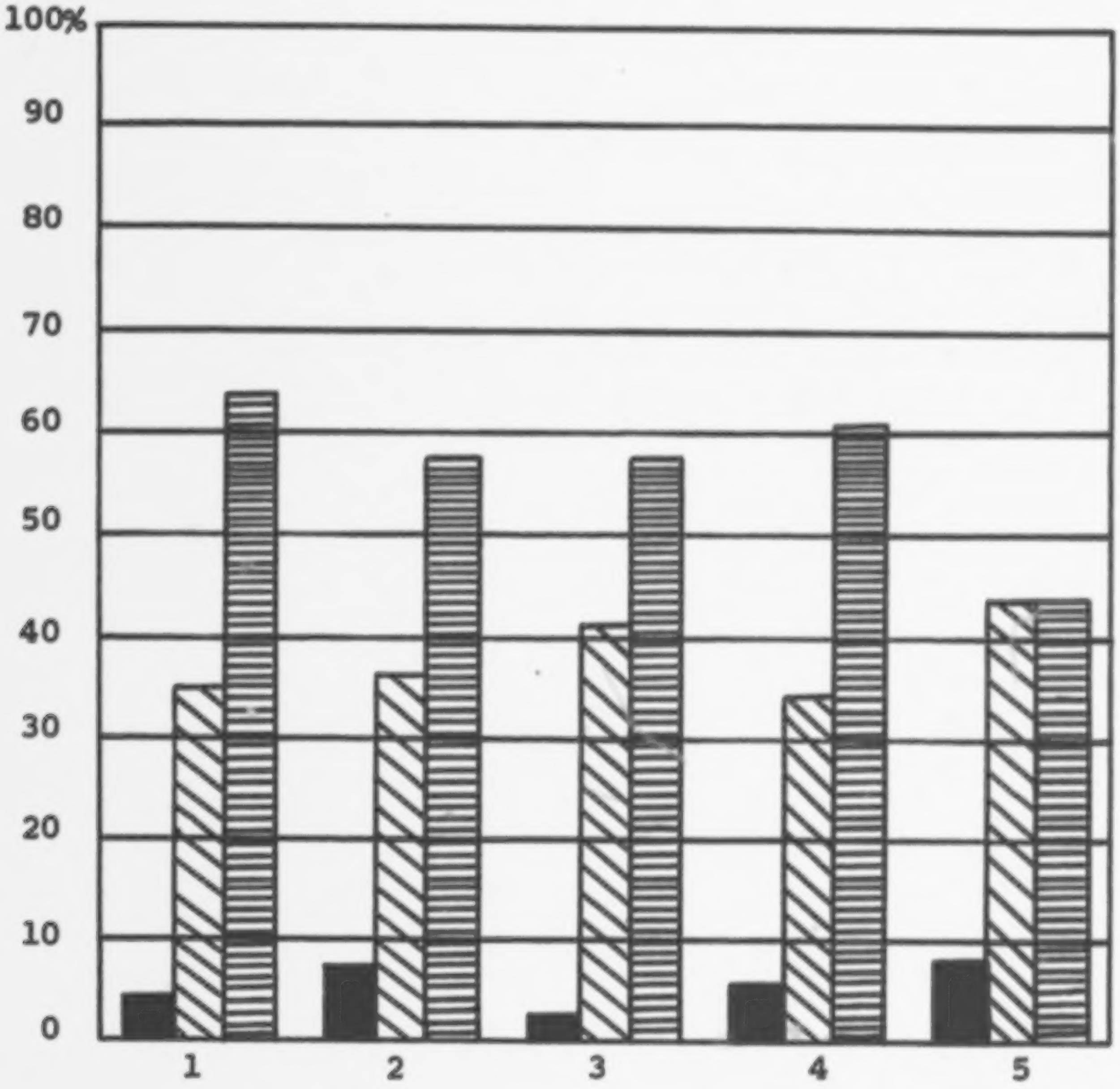


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Generally Competent ▧ :Generally Average ▤ :Generally Incompetent

Figure III.

Perceived Level of State Division of Vocational Education Salaries in Relation to Comparable Agencies



Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :High; ▧ :Competitive; ▤ :Low

Figure IV.

Perceived Philosophy of the State Division of Vocational Education

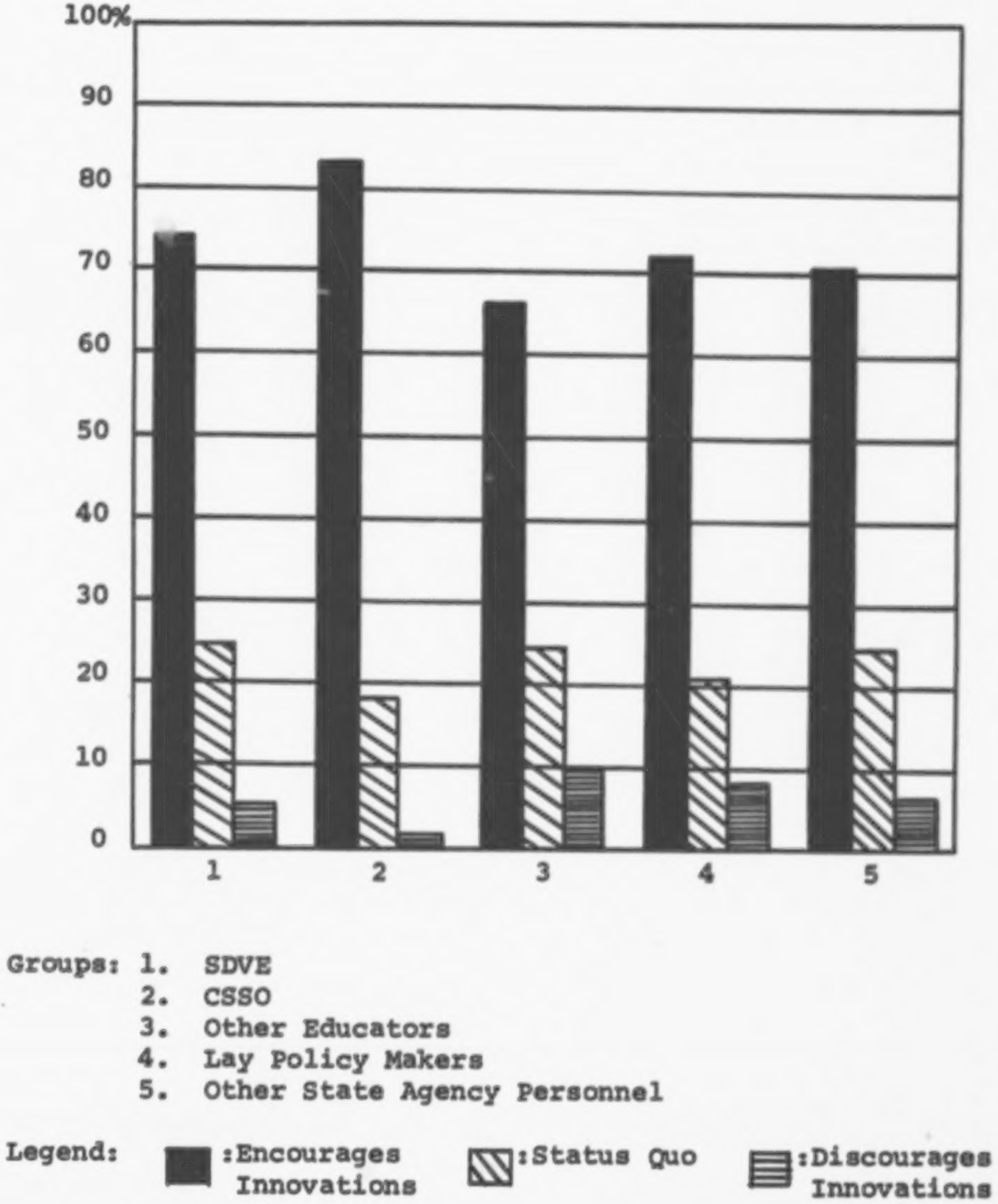
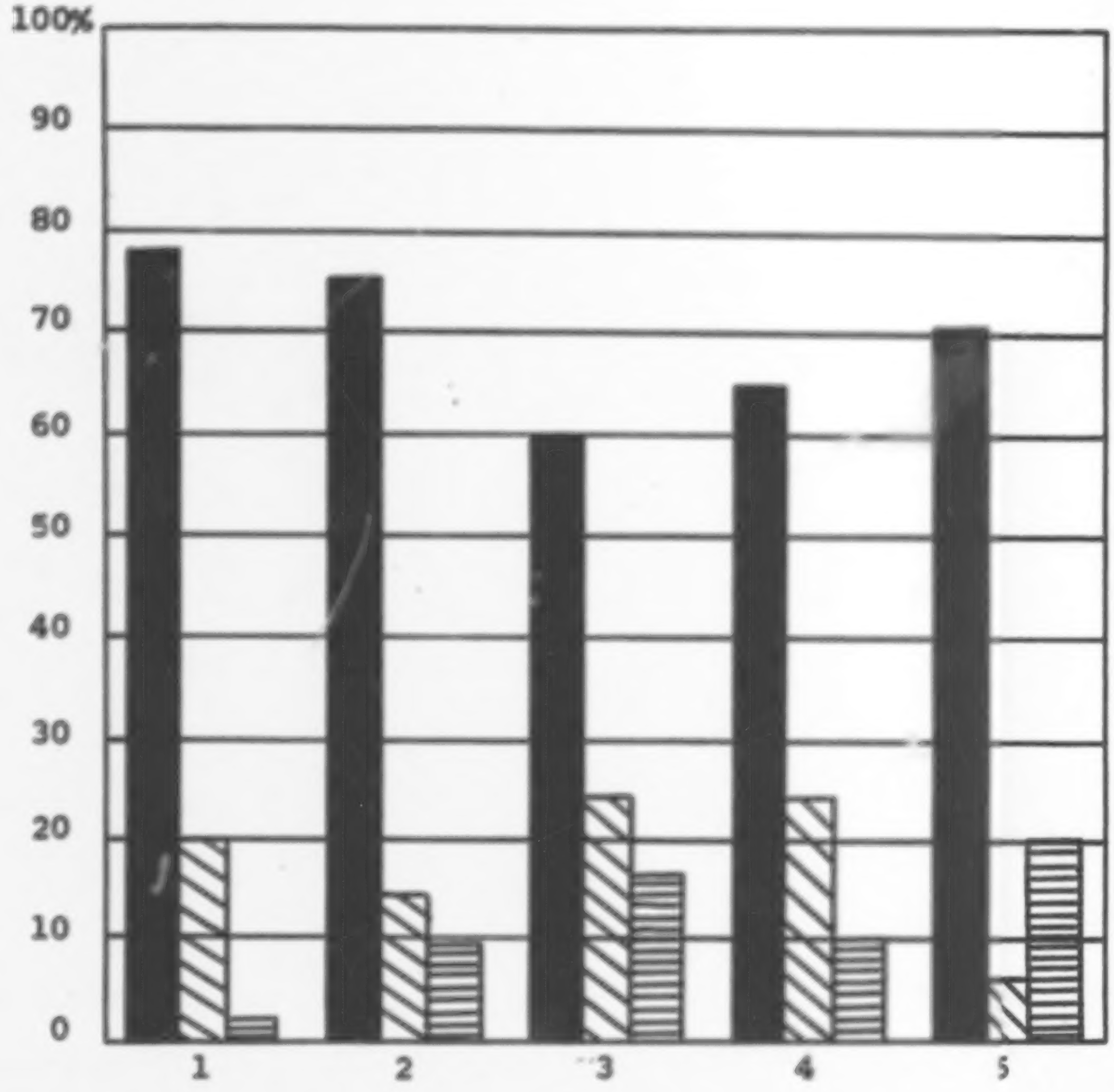


Figure V.

Perceived State Division of Vocational Education Relationships with Local Schools

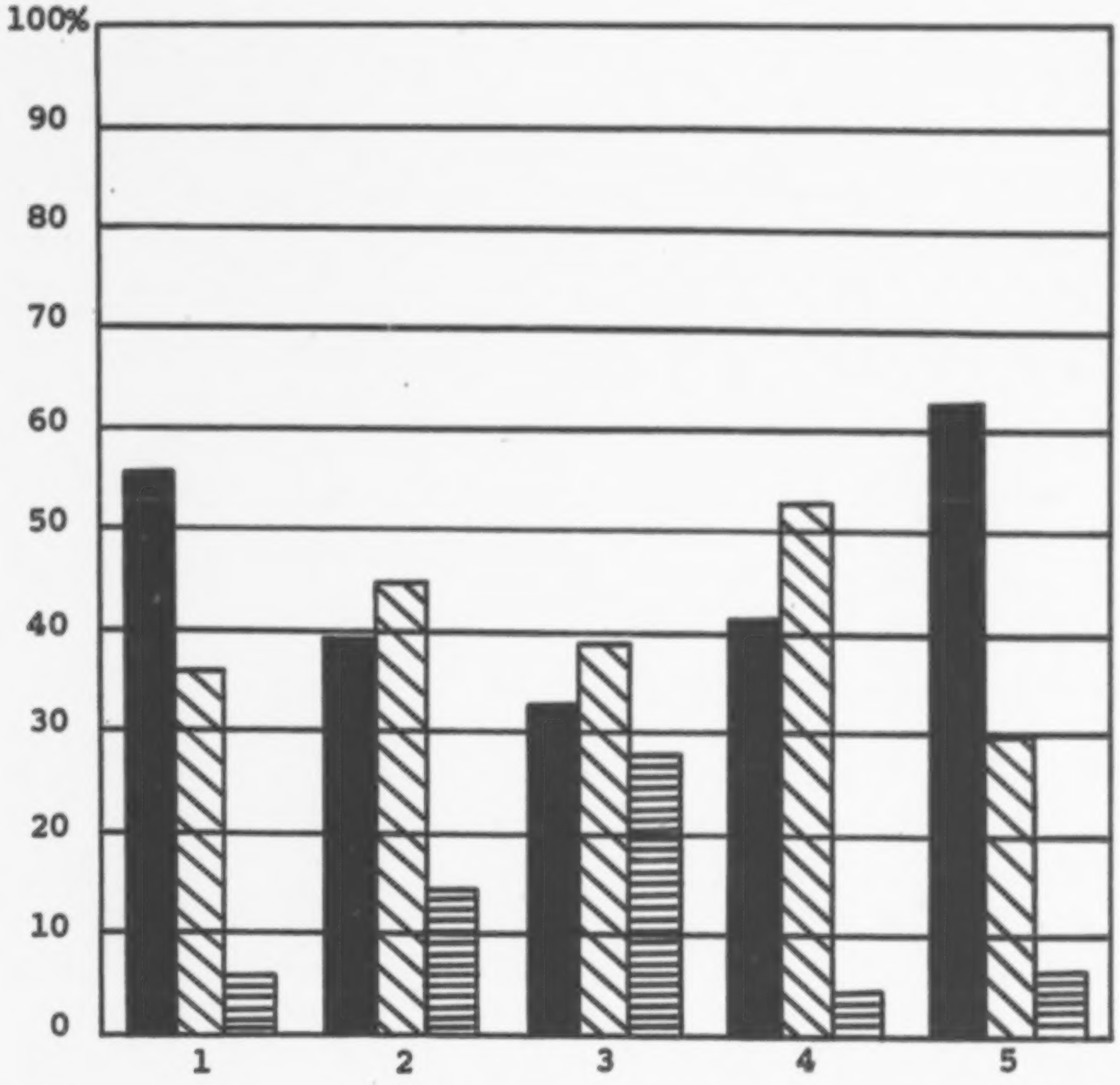


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Strong; ▧ :Average; ▤ :Weak

Figure VI.

Perceived State Division of Vocational Education Relationships with the State Finance Office

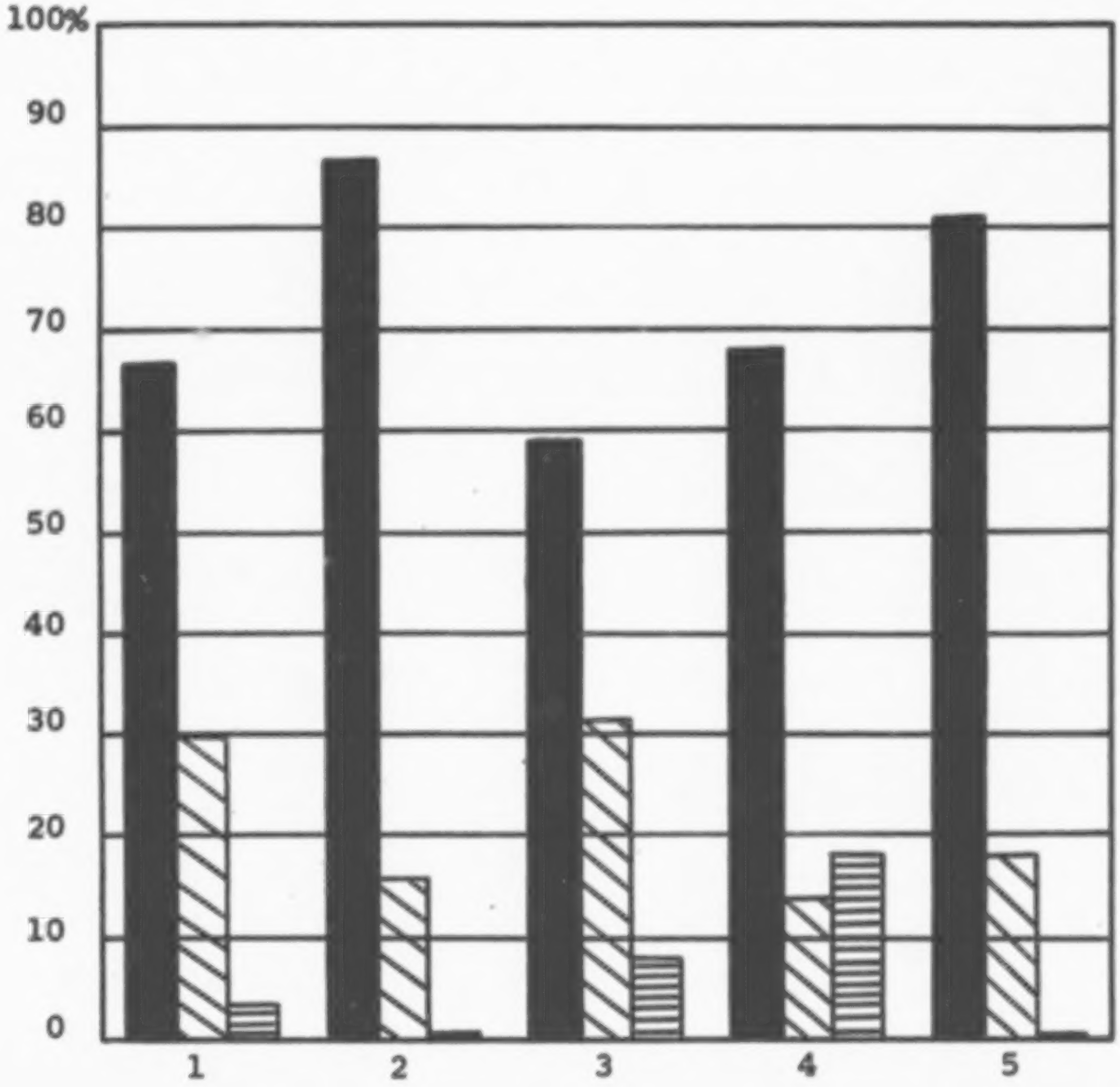


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Strong; ▧ :Average; ☰ :Weak

Figure VII.

Perceived State Division of Vocational Education Relationships with Other (than SDVE) State Agencies

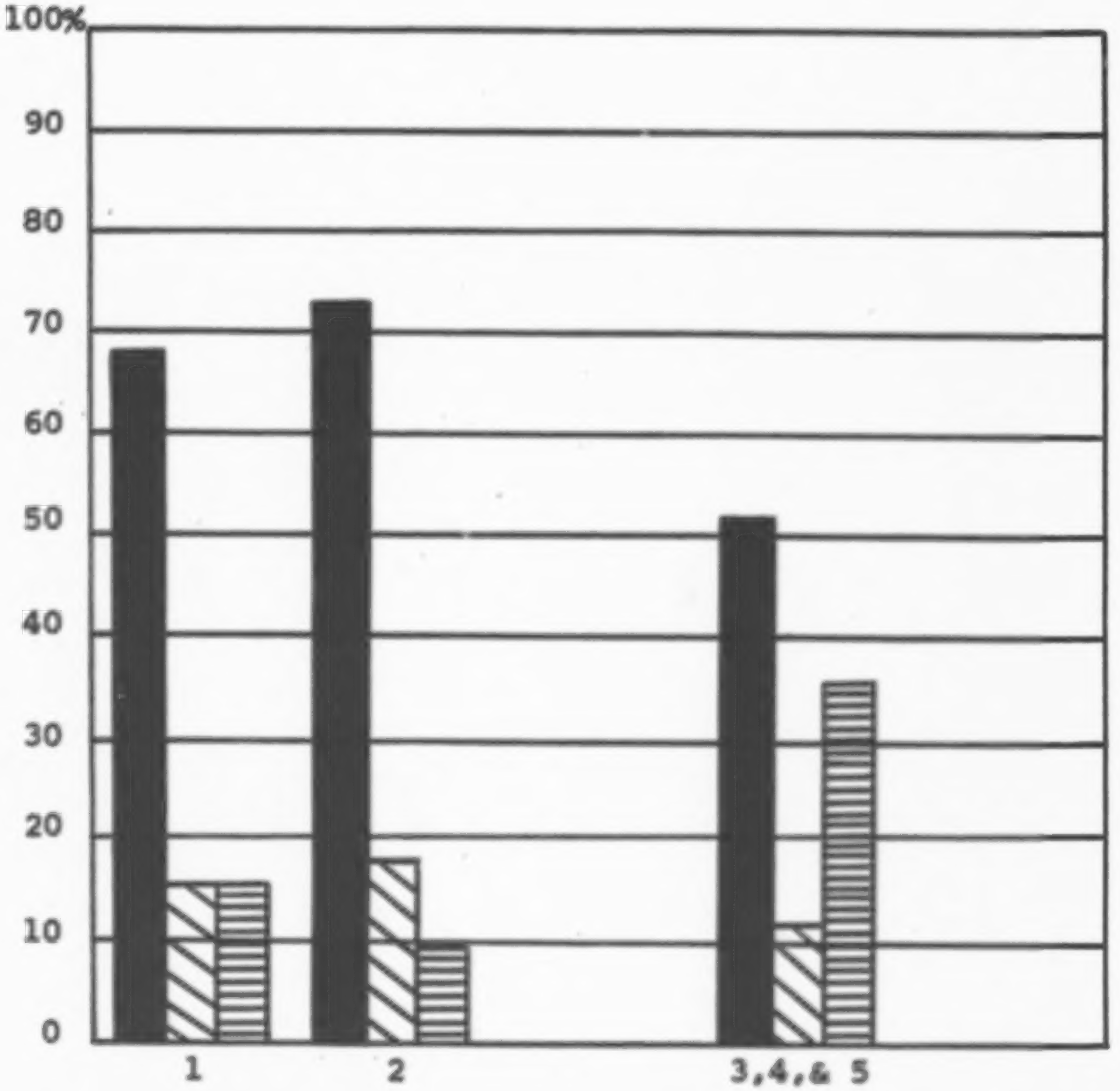


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Strong; ▧ :Average; ▤ :Weak

Figure VIII.

Perceived State Division of Vocational Education Relationships with the State Department of Education

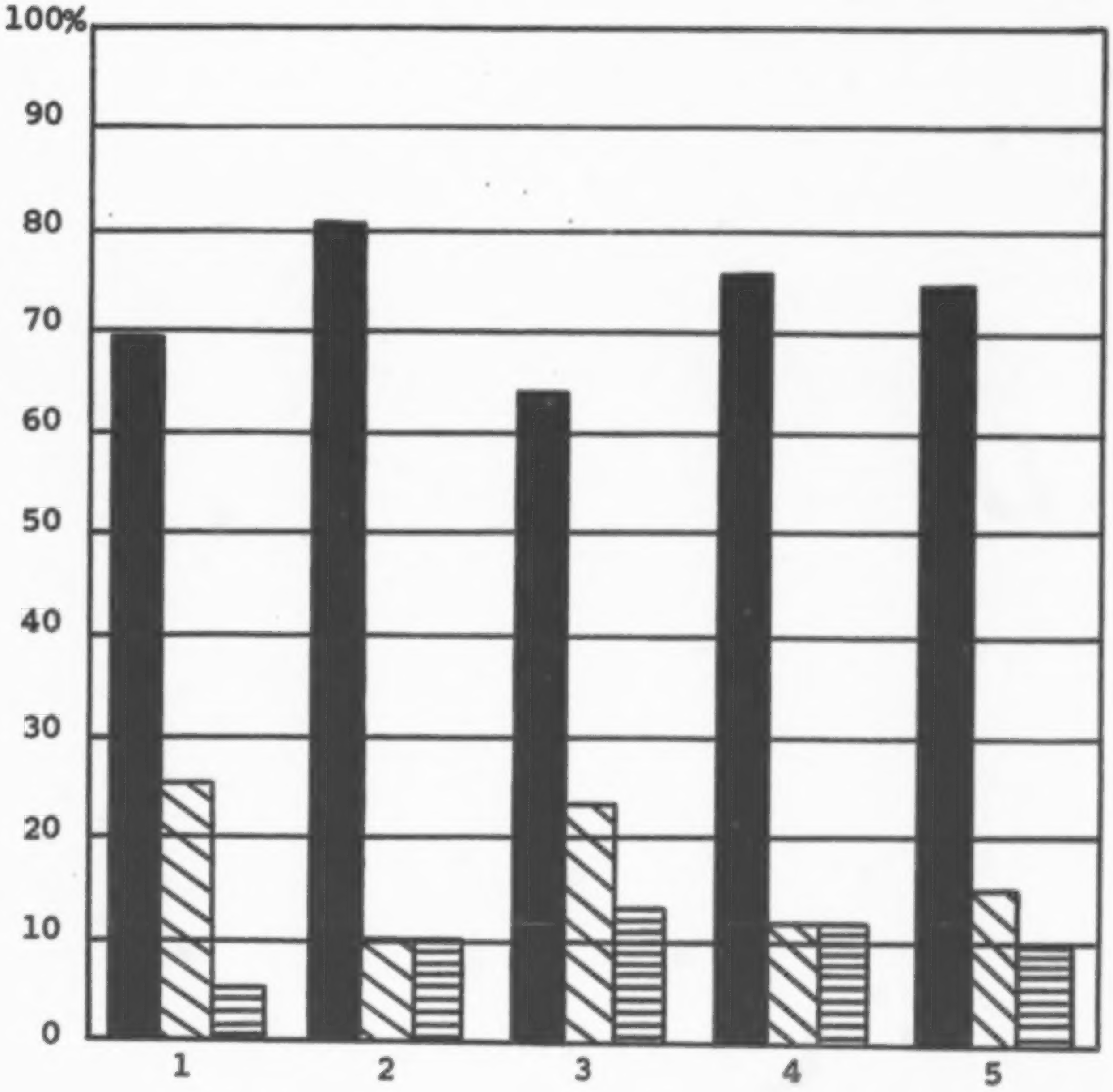


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Good; ▧:Average; ▤:Poor

Figure IX.

Perceived State Division of Vocational Education Relationships with Federal Agencies

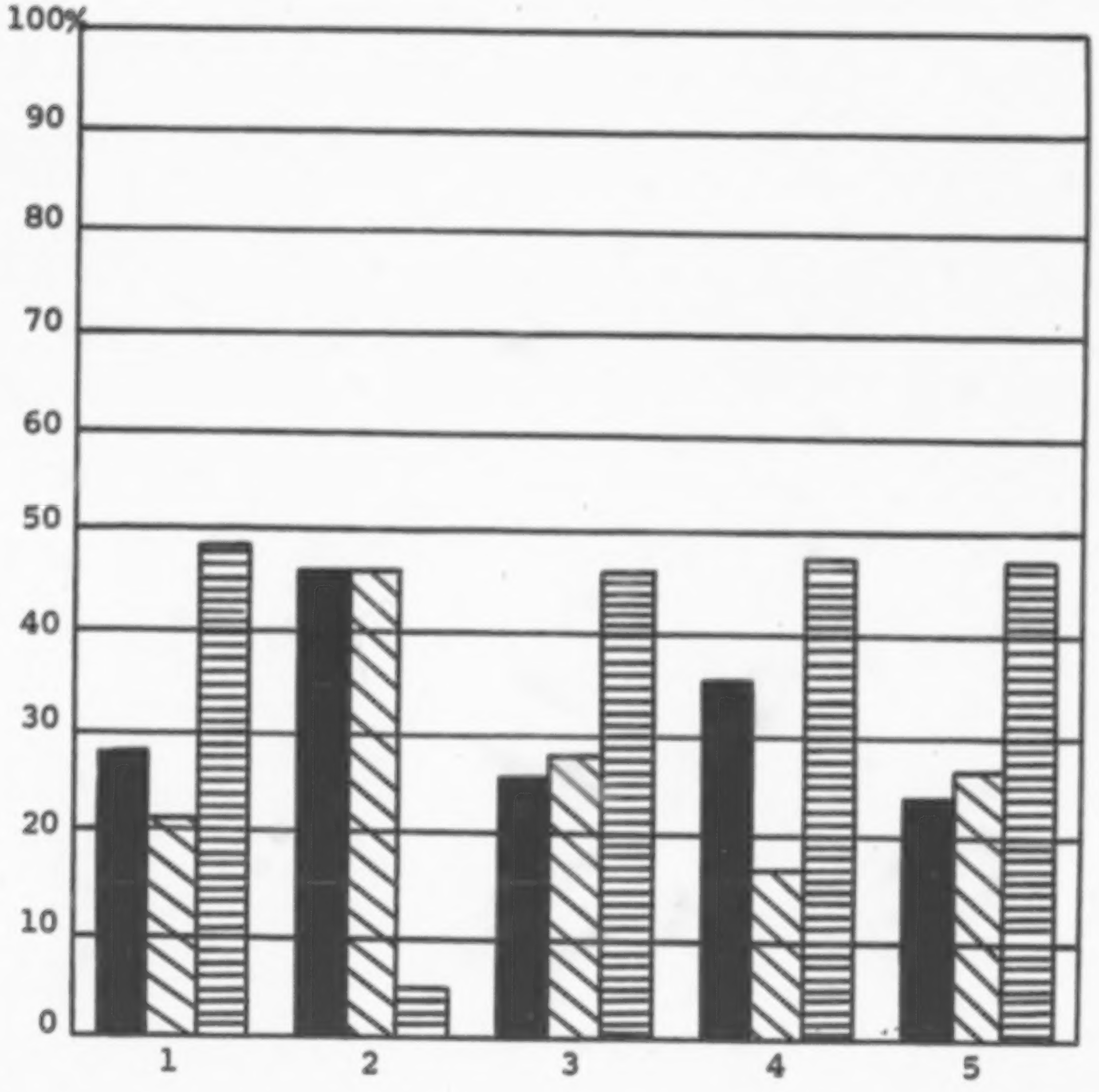


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Good; ▧ :Average; ▤ :Poor

Figure X.

Perceived Quality of the Use of Media by State Division of Vocational Education (Quality of SDVE Relations with Public)

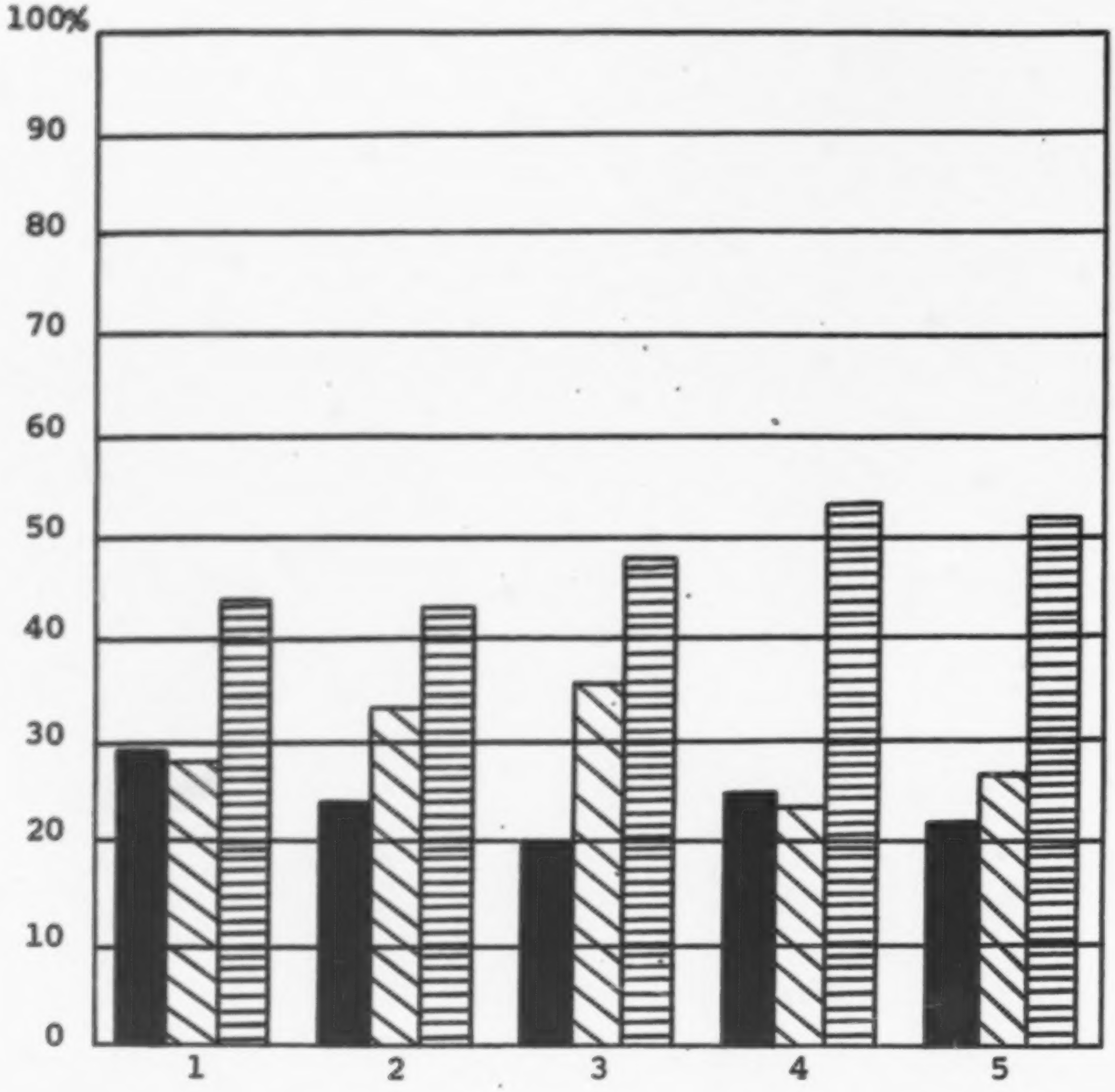


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Good; ▨ :Average; ▤ :Poor

Figure XI.

Perceived Extent of Use of Media by
State Division of Vocational Education
(Extent of SDVE Relations with the Public)



Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Great Deal; ▧:Some; ▤:Little or None

Figure XII

Perceived Quality of
Vocational-Technical Programs

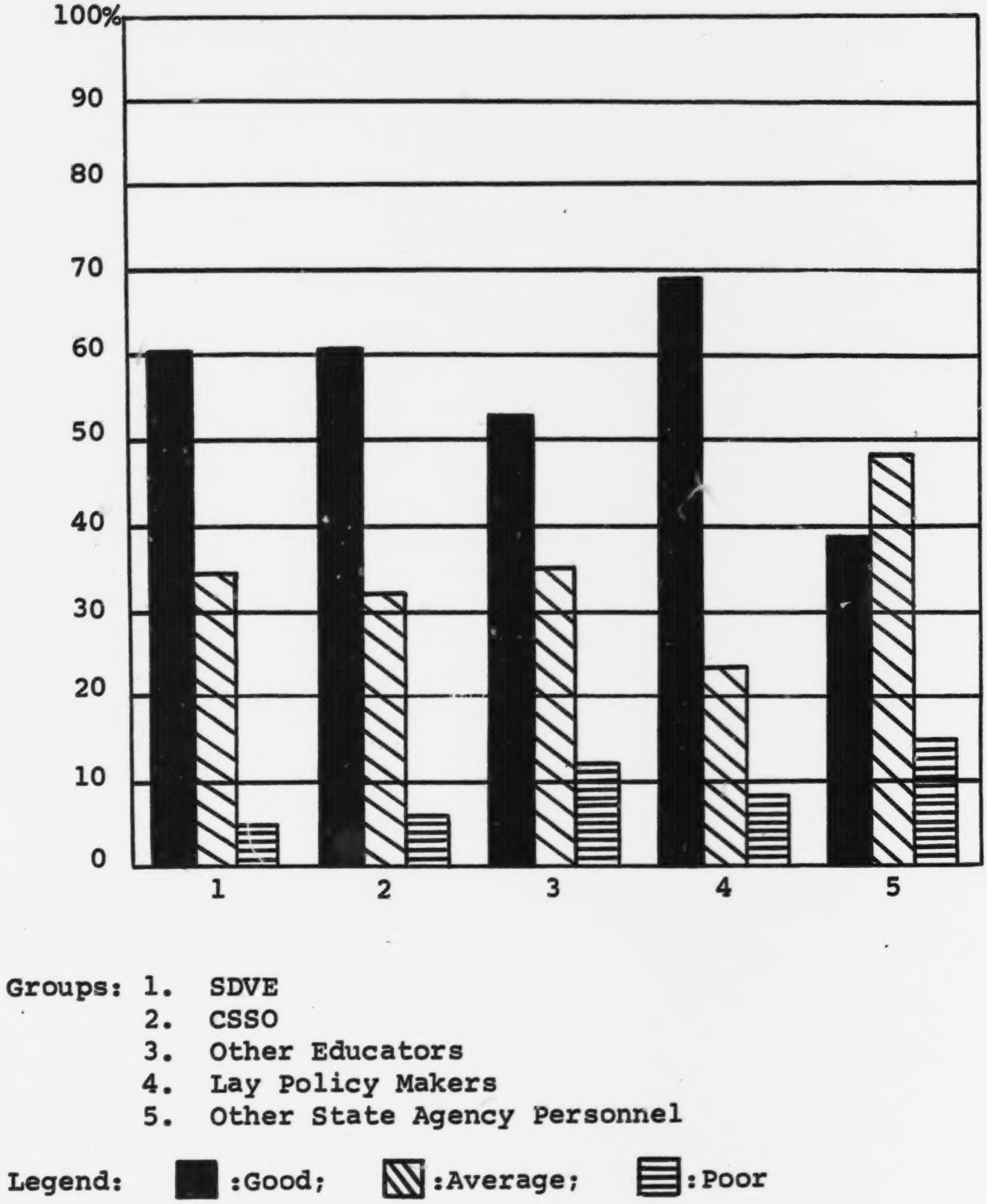
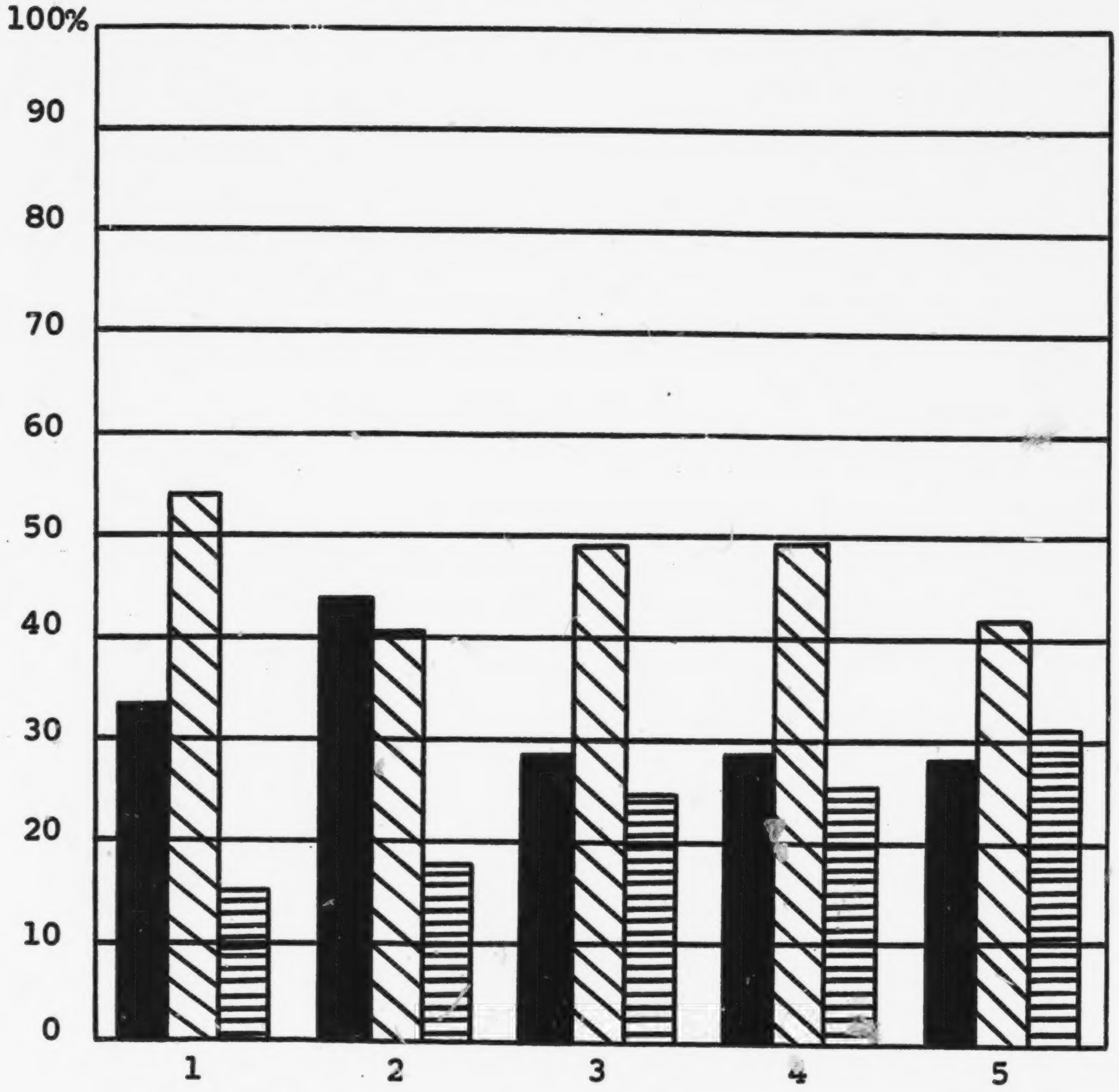


Figure XIII.

Perceived Level of Availability
of Vocational-Technical Programs

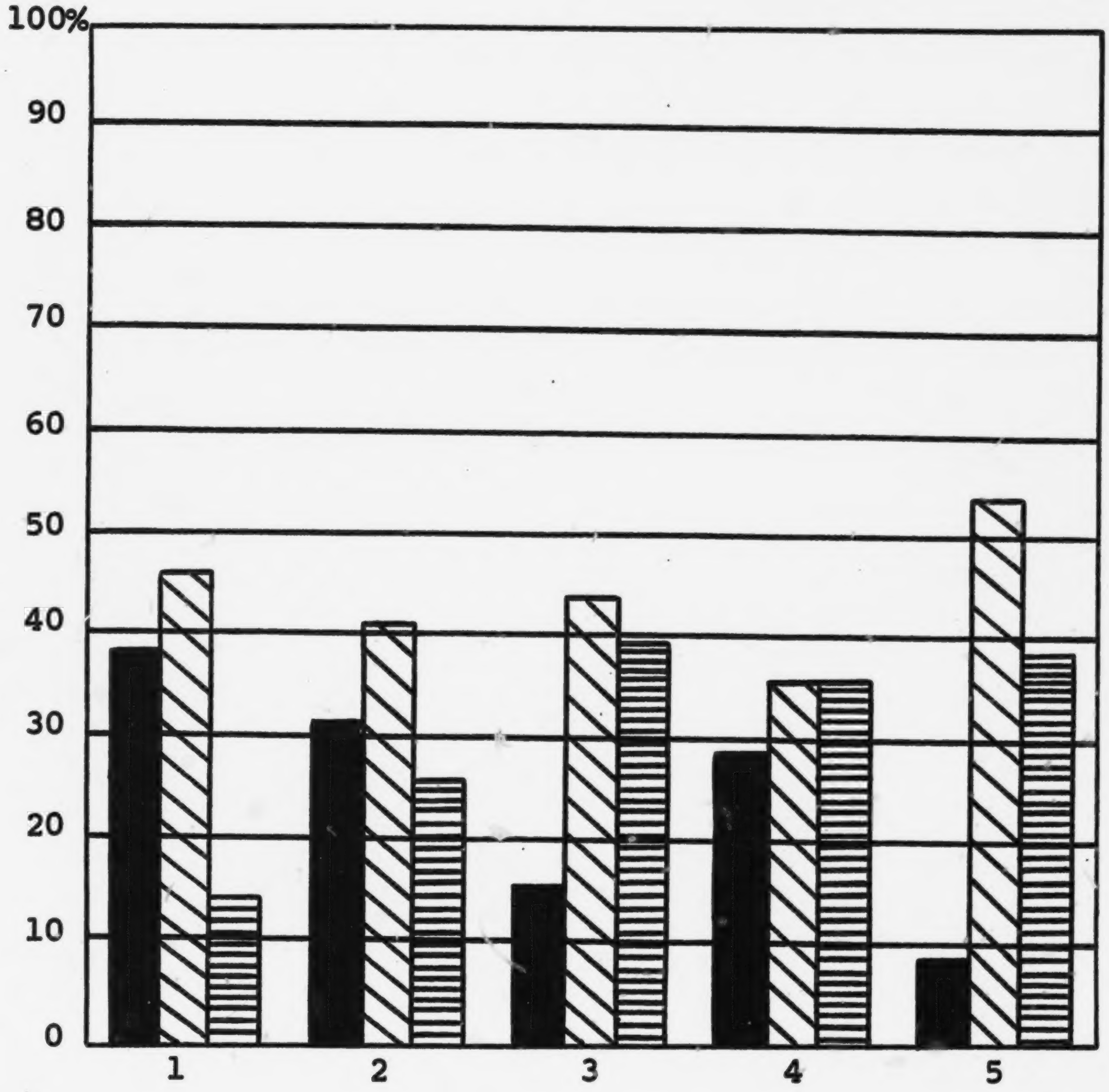


Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend: ■ :Available to Most ▧ :Available to Some ▤ :Unavailable to Many

Figure XIV.

Perceived Scope of
Vocational-Technical Programs



Groups: 1. SDVE
2. CSSO
3. Other Educators
4. Lay Policy Makers
5. Other State Agency Personnel

Legend:
■ :Wide variety of established and new developing Occupations
▨ :Some new developing occupations
▤ :Programs tend to be traditional

The results of the analysis of the individual interviews can also be reported in terms of degree of consensus of the total sample on each of the 14 items presented in the above graphs. Utilizing the definitions of consensus applied to responses to items from the Group Interview Guide, i.e.,

90 - 100% agreement = high consensus
80 - 89% agreement = high medium consensus
70 - 79% agreement = medium consensus
60 - 69% agreement = low consensus
Below 60% agreement = lack of consensus

the results are reported below:

1. Perceived Quality of SDVE Public Image

   54.7% of the total sample perceived that the Public Image of the SDVE was positive.

   ....Lack of Consensus

2. Perceived level of SDVE Staff Competence

   77.9% of the total sample perceived a high level of staff competence.

   ....Medium Consensus

3. Perceived Level of SDVE Salaries

   58.4% of the sample considered SDVE salaries low in relation to comparable agencies.

   ....Lack of Consensus

4. Perceived Philosophy of SDVE

   71.5% of the total sample perceived that the philosophy of the SDVE encouraged innovation.

   ....Medium Consensus

5. Perceived SDVE Relationships with Local Schools

   69% of the total sample considered SDVE relationships with local schools to be strong.

   ....Low Consensus

6. Perceived SDVE Relationships with the State Finance Officer

50.4% of the total number of interviewees considered SDVE relations with the State Finance Officer to be strong.

..........Lack of Consensus

7. Perceived SDVE Relationships with Other (than SDE) State Agencies

70.2% of the total sample reported strong relationships between the SDVE and other State agencies.

..........Medium Consensus

8. Perceived SDVE Relationships with the SDE

64.7% of all respondents considered the relationships between the SDVE and the SDE to be good.

..........Low Consensus

9. Perceived SDVE Relationships with Federal agencies

71.4% of the total sample reported good relationships between the SDVE and Federal agencies.

..........Medium Consensus

10. Perceived Quality of the Use of Public Media by the SDVE

Only 30.7% considered use of media good; 24.8% considered use of media average; and 44.5% considered use of media poor.

..........Lack of Consensus

11. Perceived Extent of Use of Media by SDVE

47% of the sample of respondents felt that little or no use of media was made by the SDVE.

..........Lack of Consensus

12. Perceived Quality of Vocational-Technical Programs

58.5% of all interviewees considered the quality of vocational-technical programs to be good.

..........Lack of Consensus

13. Perceived Availability of Vocational-Technical Programs

30.6% of the respondents perceived that the programs were available to most persons; 48.3% perceived availability to some; and 21.1% felt the programs were unavailable to many.
..........Lack of Consensus

14. Perceived Scope of Vocational-Technical Programs

28.7% perceived a wide variety of established and new developing occupations; 43.6% perceived some new developing occupations; and 27.7% perceived programs tending to be traditional.
..........Lack of Consensus

Hence, among the 14 items analyzed for level of consensus, only in 5 items was some degree of agreement found among all interviewees.

Discussion of Results of Individual Interviews

From inspection of the graphs and the description of consensus among groups, it would appear that perceptions vary considerably concerning the effectiveness of the state agency for vocational-technical education in relating to other agencies and in developing quality programs in vocational-technical education, available to all, and broad in scope.

There is general feeling among all groups that vocational-technical education must be made available to more youth and adults. Moreover, there appears to be sentiment for developing new occupational training opportunities--that too many of the existing programs tend to be traditional.

Respondents tended to perceive the need for more involvement of the public in planning and other SDVE activities.

Among the five groups studied (SDVE, SDE, other educators, lay policy makers, and other state agency personnel), the group most critical of SDVE operations and vocational-technical education programs was that composed of educators outside the state agencies for education.

In comparing the response patterns of SDVE respondents with those of the respondents representing the office of the chief state school officer, it would appear that the SDVE group is less confident about the job it is doing than is the group to which it is immediately responsible.

V. ANALYSIS OF SELECTED PROFESSIONAL STAFF POSITIONS IN STATE DIVISIONS OF VOCATIONAL-TECHNICAL EDUCATION

A. Introduction

Allen Lee developed the rationale and design of the study in conformance with the overall goals of the Nationwide Study of Administration of Vocational-Technical Education at the State Level. Mrs. Patricia Lantz, assisted by John Horn, was responsible for conducting the study and analyzing the results.

The purpose of this study was to make a preliminary or pilot investigation of techniques and procedures for analyzing staff activities in state divisions of vocational-technical education.

Background for the Study

It was recognized at the outset that any study of administration should take into consideration the personnel of the agency under study. It is an axiom that the effectiveness of an organization is closely related to the assignment of staff and the resulting task performed.

On the basis of the limited evidence available from other studies and reports, a reasonable assumption seemed to be that in many states, the state educational agencies were better oriented to the continuation of traditional programs than to the identification, stimulation and implementation of changes designed to meet emerging needs of a rapidly changing economy and socio cultural setting.

A 1962 study (18) indicated that activities of agencies somewhat comparable to state divisions of vocational-technical education may be logically classified as either inspectorial, compliance-checking and regulatory--or basically leadership and influencing change for improvement.

Objectives

1. to develop and field-test an instrument designed to assess the activities of SDVE professional staff in terms of whether these

activities were regulation oriented or leadership-change oriented.

2. to develop and field-test a method of applying the instrument described above in several state divisions of vocational-technical education.

3. to test the premise that SDVE professional staff spend more time in regulation activities than in leadership-change activities.

4. to compare the activities of state directors of vocational education with those of selected professional staff members.

B. Method

Development of the Instrument

In developing the instrument, it was decided to utilize a self-administering device. An instrument was designed for use by selected professional staff members to record and classify their daily activities. (See Appendix V for a copy of the "Personal Report of Work Activity" form developed for this study.)

In this instrument, it was suggested that a study of the daily activities of professional personnel should be directed along three principal lines:

a. It should concern the kinds of people with whom professional staff personnel interact.

b. It should consider the kinds of actions or decisions in which professional staff personnel are involved.

c. It should take account of a focus of concern in carrying out a particular action.

In addition to these three areas, it was felt that some consideration should be given to distinguishing between clerical and professional activities. The specific items finally developed to represent these areas are shown in Table 1 which follows.

The "Personal Report of Work Activity" was designed to incorporate

TABLE 1

ACTIVITY VARIABLES CONSIDERED IN THE PERSONAL REPORT OF WORK ACTIVITY

I. Type of Work

  A. Professional
  B. Clerical

II. Personnel Involved

  A. Lay Personnel
  B. Students
  C. Teachers (Kindergarten to 12th grade)
  D. Administrators (Kindergarten to 12th grade)
  E. Teachers (13th and 14th grades)
  F. Administrators (13th and 14th grades)
  G. Teachers (4-year College)
  H. Administrators (4-year College)
  I. State Directors of Education Staff Members
  J. Oneself only
  K. Other, not represented above* (see next page)

III. Action

  A. Planning
  B. Financing
  C. Policy Formulation
  D. Organizing
  E. Staffing
  F. Coordination
  G. Communication
  H. Directing
  I. Promoting
  J. Consulting
  K. Checking Compliance, Inspecting
  L. Statistical Research
  M. Preparation of Records and Reports

- N. Attending Professional Meetings
- O. Travel
- P. Miscellaneous Trivia

IV. Focus

- A. Goal Setting
- B. Problem Indentification and Definition
- C. Program Research
- D. Program Design and Development
- E. Program Evaluation
- F. Dissemination
- G. In-Service
- H. Rules, Regulations, Forms, Procedures

---

* The classification "Other" includes:

Home Economics
(Gainful Employment)
MDTA
Work Study
(excludes Guidance)

Teachers

DEFINITION OF TERMS USED ON "PERSONAL REPORT OF WORK ACTIVITY"

Under "Action":

1. Planning: devising, designing and projecting method, system, manner, arrangements to achieve objectives.
2. Financing: fiscal planning, managing, allocation, controlling and securing revenue
3. Policy Formulation: defining and establishing agreement concerning principles and guidelines which administrative officers shall follow
4. Organizing: structuring patterns for deployment of people and for their activities
5. Staffing: selecting and placing employees
6. Coordination: relating, integrating various aspects of projects, programs, etc.
7. Communication: to give or receive information via any media
8. Directing: instructing, ordering or leading to achieve goals
9. Promoting: stimulating and encouraging projects and activities
10. Consulting: advising, recommending
11. Checking Compliance, Inspecting: reviewing officially or examining critically for compliance with established minimum standards
12. Statistical Research: analysis, measuring and projecting programs on purely quantitative basis
13. Preparation of Records and Reports: maintaining logs of activities and preparing narrative or statistical information
14. Attending Professional Meetings: conferences such as AVA, AASA and AERA

15. Travel: for official business from office

16. Misc. Trivia: routine tasks, e.g., opening and sorting mail, instructions to clerical staff, etc.

Under "Focus":

1. Goal Setting: identifying, defining and agreeing upon objectives and ideals in education

2. Problem Identification and Definition: determining obstacles or unsatisfactory situations (including finances, methods, materials, curricula, administration and training) which need change or improvement

3. Program Research: seeking new or better methods, materials and subject matter

4. Program Design and Development: inventing, devising and refining combinations of methods, materials and subject matter

5. Program Evaluation: critical study of ideas, materials or methods involving appraising, rating or examining

6. Dissemination: distribution of information concerning methods, materials and curricula in education

7. In-Service: conducting or participating in an orientation or updating procedure or activity

8. Rules, Regulations, Forms, Procedures: interpretation, explanation, clarification, enforcement of routine responsibilities

the items of Table 1, to enable a respondent to show how each unit of his working time was spent and yet to be such that an individual could complete the form with a minimum of effort and in a short amount of time.

Selection of the Sample

Because the prime objective of the study was to develop and field-test an instrument designed to record and classify the daily activities of selected professional staff of the SDVE, it was deemed more important to have a group of highly motivated SDVE personnel participating than to have a truly random selection of state divisions of vocational-technical education constituting the sample for the study. Only those states which had previously cooperated in collecting data by means of the Group Interview Guide were considered for inclusion in the position analysis study. Sixteen states agreed to participate.

The states were invited to participate by the Project Director or the Assistant Project Director. The general nature of the study was explained, and if the state wished to participate, a date for an orientation session was agreed upon.

Although participation in the pilot study depended upon the individual state's consent, an effort was made to secure a sample which would be somewhat representative of the 50 state divisions of vocational-technical education. An *ex post facto* analysis of the 16 states was made with the following results:

1. *Regional distribution:* Northeast - 3 states; North Central - 5 states; Southern - 4 states; Western - 4 states.
2. *Distribution by School Population:* Less than 100,000 - 1 state; 100,000 to 600,000 - 6 states; 600,000 to 1,000,000 - 3 states; 1,000,000 to 3,000,000 - 6 states; 4,000,000 or more - no states.

In sampling respondents within states, consideration had to be given to the kinds of supervisory personnel to be included in the survey. In this regard, the aims were:

1. To include a minimum of two position levels of professional responsibility--state director and supervisors of programs.

2. To maintain consistency for the different states.

The following kinds of supervisory personnel were found in all or almost all states and thus were selected for study. (The number to the left indicates the number of respondents sampled in the category in question):

16	State Directors
15	Supervisors of Agriculture Education
16	Supervisors of Business & Office Education
11	Supervisors of Distributive Education
16	Supervisors of Homemaking Education
15	Supervisors of Technical & Industrial Education
16	Supervisors of Manpower Development & Training
105	Total Respondents

Sample forms and instructions were prepared and two trial runs of data recording were made in November and in January, with subsequent revisions of forms.

Procedure

Mrs. Patricia Lantz visited each state and conducted a one-hour group orientation session with the state director and selected supervisors. Material packets containing the essential forms, instructions, and stamped, addressed envelopes for mailing were delivered at the session.

In the administration of the survey device, each respondent supplied requested information for each of 14 consecutive days. The completed form was mailed to the Project office in Berkeley. Respondents also completed a brief, self-written job description and mailed this during the first week of the recording period. The data collection period extended from January 23 through April 30, 1967.

Forms were checked for omissions and/or clarification of entries and items were completed by telephone contract. In some cases, arbitrary decisions (see Appendix V, C) were made to complete entries if the respondent could not be reached or felt he could not clarify information.

In most cases, after telephone follow-ups had been made, the data provided by a respondent on the 14 forms was complete in all respects. Forms for weekdays indicated a normal day's work and those for weekdays indicated either some work or that some individuals normally do not work on some weekends. In a few cases, however, the forms were still not fully complete in accordance with this conception of a work week. Since the aim in this study was to obtain an estimate of the "typical" daily activities of the respondents and a day was conceived of as a full day, the missing data indicated by these examples was estimated on the basis of the data actually in hand. If an individual missed work for one-half day or missed an entire day's work, the time that he would have spent in various activities was estimated as the average of the time he spent in such activities on the other days. In other words, the daily times estimated for an individual were averages over the time he actually provided.

Data Processing and Preliminary Analysis

A total of 105 persons returned the sets of forms for 14 consecutive days of activities. All but two persons fully completed the forms. Adjustments were made for the other two persons in order to compute the data equitably.

After the forms had been checked for completeness and all entries verified, the data were prepared for machine processing. The time reported was converted from actual time (minutes and hours) to proportions of the total time worked for each day.

If an individual did not follow the directions for completing the forms, used narrative description to complete forms, or was not available for correction, decisions were made to clear the entry. (See Record of Arbitrary Decisions, Appendix V, D).

Altogether, 47 items of information from each of 1, 470 forms were placed on punch cards and transferred to magnetic tape for easier analysis.

Analysis of Data

In using the data-gathering instrument, respondents allotted each given unit of time as follows:

a. to either clerical or professional work
b. to one or more of 11 categories of persons with whom he worked

c. to one (only) of 16 kinds of action involved in the unit of work
d. to one of 8 kinds of focus that might be taken in carrying out the action in question.

For example, a two-hour unit of time might be recorded as "professional", spent with "college teachers" and "college administrators" in the activity of "planning" and with focus on "goal setting".

The times allotted to each of the 38 categories were averaged over the weekdays for which the respondent had completed the form. In most cases, the averages are over 10 weekdays, although, as noted in the previous section, in the few cases when a respondent did not work on a weekday or the information provided for a particular day was not complete, the average was computed over less than 10 days. For most of these cases, data on at least nine days was available for the average and in all cases at least eight days were involved.

For each individual, then, a weekday "score" was obtained for each category of the "Personal Report of Work Activity". This "score" was the average time per day allotted to the category in question. Hereafter this "score" will be referred to as "weekday daily time" (time per day). A similar "score" based upon the data for weekends will be referred to as "weekend daily time". The categories in which such daily times were recorded will be referred to as "activities" or "variables".

It was difficult in many instances to draw a finite distinction between activities, and, therefore, the amount of time reported was the respondent's best estimate of what he thought the distribution to be. Reliability of some entries might be challenged on the basis that some respondents tended to make only one or two entries each day, or tended to make three or four entries for one time period, which time was then distributed equally among the four entries.

C. Results

This pilot study of the instrument, "The Personal Record of Work Activity," would indicate that such an instrument can be self-administered.

However, the results given here represent only the perceived use of time by 105 individuals. Because the research design did not include

TABLE 3

AVERAGE PERCENT OF TOTAL DAILY TIME SPENT WITH DIFFERENT KINDS OF PERSONNEL

	Position							
Personnel	Direc.	Ag. Sup.	Bus.	D.E.	H.Ec.	T & I	MDTA	All
Lay People	12.7	8.8	19.5	21.5	8.0	11.9	9.1	12.9
Students	2.0	17.1	8.3	17.1	6.3	1.5	2.2	7.6
Teachers K-12	4.1	28.6	27.6	21.7	19.3	9.6	4.3	16.2
Admin. K-12	14.1	22.6	27.7	15.9	13.0	19.2	87.5	17.2
Teachers 13-14	4.7	6.1	17.5	8.7	4.4	7.5	2.8	7.3
Admin. 13-14	8.2	6.1	13.4	7.5	4.4	16.6	15.3	10.2
Teach.--4-yr. College	3.9	8.9	15.8	10.5	6.5	2.1	2.0	7.0
Admin.--4-yr. College	7.8	7.0	12.1	5.5	8.1	2.3	4.4	6.8
SDE Staff	51.8	38.6	40.2	31.8	38.5	44.6	37.0	40.6
Self	20.7	27.5	31.1	30.2	32.7	21.5	27.4	27.4
Other	17.4	11.7	13.7	8.8	15.2	13.1	34.8	16.8
Total Teachers	12.8	43.7	60.9	41.0	30.4	19.3	9.2	30.6
Total Admin	30.2	35.8	53.3	29.0	25.7	38.2	28.6	34.2

TABLE 4

AVERAGE PERCENT OF TOTAL DAILY TIME IN EACH OF 16 KINDS OF ACTIVITIES

Activity	Position							
	Direct.	Agric.	Bus.	D.E.	H.Ec.	T&I	MDTA	All
Planning	15.7	17.4	13.0	15.3	13.1	13.6	16.7	15.0
Finance	6.4	3.4	1.8	1.7	2.4	5.9	6.3	4.1
Policy Form.	6.1	5.0	3.5	3.7	1.9	6.3	2.6	4.2
Organization	3.9	4.0	4.2	5.0	3.8	2.5	3.0	3.8
Staff	1.1	1.0	0.5	1.9	0.7	2.5	0.2	1.1
Coordination	6.7	6.1	4.7	5.8	5.7	3.8	8.4	6.0
Communication	14.6	16.0	13.2	16.9	14.5	8.2	12.7	13.8
Directing	4.1	2.0	2.2	4.0	2.4	3.4	4.6	3.3
Promoting	5.1	4.8	5.1	6.3	2.7	4.5	2.5	4.4
Consulting	9.6	10.0	5.4	8.8	9.0	8.8	7.0	8.4
Chk. Compl.	0.5	6.4	4.6	1.8	3.9	11.4	5.0	4.8
Stat. Research	0.7	0.7	1.2	1.1	0.8	0.5	0.7	0.9
Pre. Rec. & Repts.	5.2	5.4	7.0	5.7	5.1	5.0	7.5	5.9
Prof. Meet.	7.7	6.7	12.7	8.5	13.4	8.0	6.3	9.1
Travel	10.4	11.2	11.3	10.1	10.8	9.8	11.1	10.7
Misc.	6.6	3.7	7.7	5.0	10.4	5.8	5.3	6.5

TABLE 5

AVERAGE PERCENT OF TOTAL DAILY TIME CATEGORIZED ACCORDING TO FOCUS OF ACTIVITY

Focus	Position							
	Direct.	Agr.	Bus.	D.E.	H.Ec.	T&I	MDTA	All
Goal-Setting	9.7	5.0	10.2	10.9	7.2	12.6	13.3	9.8
Prob. Ident. & Def.	19.2	3.3	17.9	13.4	10.9	17.3	14.8	15.3
Prog. Res.	6.5	2.3	3.1	3.3	3.3	5.5	2.4	3.8
Prog. D. & D.	26.4	31.1	23.1	30.7	27.4	23.0	26.3	26.9
Prog. Eval.	10.1	10.9	7.6	7.6	9.3	12.9	17.7	11.0
Dissem	19.4	14.1	18.1	13.7	12.4	10.7	8.6	14.0
In-Service	5.6	10.7	3.6	7.6	16.5	5.9	4.8	7.9
Rules, Reg. Forms	11.3	12.3	14.6	11.3	13.2	15.6	12.4	13.0

TABLE 6

WEEKEND WORK

AVERAGE DAILY TIME (IN HOURS) WORKED AND PERCENT OF DAYS WORKED

	Position Voc. Dir.	Agri.	Bus.	D.E.	H.Ec.	T&I	MDTA
N	16	15	15	13	16	14	16
Daily Ave. (Hours)*							
Total**	5.06	5.70	4.53	4.52	4.51	4.02	3.54
Prof.	4.61	4.70	4.03	3.92	4.09	3.32	2.87
Cleric.	2.14	.91	.50	.39	.25	.30	.65
Percent of 4 Days Worked	55	57	55	46	53	45	45

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* See Explanation, Table 2.

** Percents were not computed by weekend days worked since many days were not worked; therefore, actual reported time worked in hours is a better descriptive index.

TABLE 7

WEEKEND WORK

AVERAGE DAILY TIME (IN HOURS) SPENT WITH DIFFERENT KINDS OF PERSONNEL

	Position						
Personnel	Direc.	Ag. Sup.	Bus.	D.E.	H.Ec.	T & I	MDTA
Lay People	.98	2.45	.53	1.46	.30	.42	.96
Students	.21	1.33	1.02	1.67	.49	.30	.76
Teachers K-12	.40	1.52	.76	1.33	.68	.54	.72
Admin. K-12	.56	.88	.42	.69	.28	.60	.89
Teachers 13-14	.23	.41	.98	.00	.14	.26	.09
Admin. 13-14	.26	.23	.42	.00	.43	.38	.00
Teach.--4-yr. College	.20	.47	.64	.58	.51	.16	.13
Admin.--4-yr. College	.14	.95	.09	.00	.22	.18	.00
SDE Staff	.71	1.00	1.00	.50	.95	1.24	.22
Self	2.16	2.54	2.27	2.48	1.97	2.14	2.07
Other	1.16	.77	.35	.14	.37	.00	.91
Total Teachers	.83	2.34	2.39	1.91	1.34	.96	.94
Total Admin.	.96	2.06	.94	.68	.93	1.16	.89

TABLE 8

WEEKEND WORK

AVERAGE DAILY TIME (IN HOURS) IN EACH OF 16 KINDS OF ACTIVITIES

Activity	Position					
	Direct.	Agri.	Bus.	D.E.	H.Ec.	T&I	MDTA
Planning	.90	.85	.77	.44	.58	1.04	.85
Financing	.00	.06	.00	.00	.06	.08	.20
Policy Forming	.10	.06	.18	.04	.06	.19	.00
Organizing	.10	.12	.09	.14	.14	.14	.26
Staffing	.00	.00	.00	.02	.01	.00	.09
Coordinating	*.10*	*.27*	*.32*	*.21*	*.19*	*.22*	.11
Communicating	.58	.65	.24	.45	.33	.19	.30
Directing	.10	.80	.45	.04	.06	.17	.00
Promoting	.38	.04	.00	.17	.25	.20	.19
Consulting	.31	.27	.13	.21	.28	.08	.67
Checking Compliance	.00	.00	.10	.00	.15	.48	.09
State Research	.00	.09	.10	.12	.10	.17	.04
Preparing Records	.17	.33	.35	.25	.39	.19	.42
Attending Meetings	.70	.59	1.13	1.23	.82	.42	.04
Travel	1.24	.70	.50	.96	.93	.54	.30
Miscellaneous	.31	1.06	.18	.33	.26	.04	.07

TABLE 9

WEEKEND WORK

AVERAGE DAILY TIME (IN HOURS) FOR DIFFERENT FOCI

Foci							
Goal Setting	.31	.26	.42	.19	.43	.62	.22
Problem Identification	.37	.35	.87	.22	.46	.46	.28
Program Research	.67	.62	.34	.42	.18	.22	.04
Program Design	1.61	4.89	1.02	2.08	.70	.86	1.48
Program Eval.	.61	.40	.37	.42	.36	.46	.78
Dissemination	.96	2.78	.21	.71	.43	.66	.54
In-Service	.26	2.16	.13	.00	.66	.38	.74
Rules, Regul.	.14	2.06	1.03	.38	.63	.36	.24

a random sample of states nor was a representative stratified sample drawn for the study, it would be misleading to generalize the findings from this pilot study.

Also, from comments made by participants, there appeared to be some problems in using the form as designed. There seemed to be feeling that in some instances the activity and focus categories were inadequate or not sufficiently inclusive by definition to properly record their work. Thus, semantic differences among respondents might have distorted the findings.

It should be recognized at the outset that these data were reports of time spent on various activities with specified persons, not actual time. There was no absolute way of knowing whether or not a director or supervisor did, in fact, spend his time as reported on the questionnaire. On the other hand, there was no reason to expect that individuals, or groups of individuals, would systematically distort the report they supplied.

Results by Work Time and Classification

Table 3 (below) indicates results obtained in the analysis of data which provided a description of average work time per day expressed in hours and a percent of daily time spent in professional and clerical activities. The weekday daily times were averaged for the individuals in each position and for the total positions.

The averages for percent-daily-time spent with various categories of SDVE client population are shown in Table 4. Table 5 presents the average percent of daily time spent in each of 16 activities. Table 6 shows the results relating to the specific focus of various activities. Results obtained in analysis of data of reports of weekend work are indicated in Tables 7, 8, 9, and 10. The weekend daily times (in hours) were averaged for all individuals in each position.

D. Discussion

The instrument designed for this study attempted to assess use of time by professional SDVE staff members in terms of three dimensions:

(1) the kinds of people with whom the professional staff interact; (2) the kinds of actions or decisions in which professional staff are involved; and (3) the focus or concern in carrying out a particular action.

Perusal of Table 4 will give the reader a description of the kinds of people with whom the professional staff interact. There appear to be considerable differences between the State Director and his program supervisors, as well as differences among supervisors, in kinds of clientele, etc., as the following statements suggest:

1. Lay people (including school board members, businessmen, community club groups such as Rotary Club, League of Women Voters) appear to have significantly more contact time with supervisors of business and distributive education than do directors and other supervisors. MDTA supervisors spent nearly twice as much time with the Other category (which includes people from such agencies as Office of Economic Opportunity, Department of Employment, Office of Education, etc.) as other respondents.

2. Contact with students ranged from 17.1% of average daily time by both supervisors of agriculture and distributive education to 2.2% and 2% for supervisors of MDTA and state directors.

3. State Directors appear to be involved directly or indirectly with the SDVE staff somewhat over 50% of total daily time on the average, while distributive education supervisors appear to have spent significantly less time (31.8% average daily time) with this group. Other supervisors cluster between 37 and 44%.

Table 5 presented a description of the kinds of actions or decisions (activities) in which the professional staff were involved. Again, differences can be noted between the various groups of respondents:

1. The Trade and Industrial group and the state directors spent more time than any other group in policy formulation.

2. Directors and trade and industrial, and MDTA supervisors appear to spend comparable time in matters of finance.

3. Wide variance in reported activities by trade and industrial

supervisors shows considerably more time than other respondents in compliance checking, while, by contrast, they reported the least amount of time in activities termed communication. Distributive education and agriculture supervisors reported rather large times each day in communication activities, followed closely by directors and home economics supervisors.

4. Little time was reported by any group in statistical research or staffing.

The focus of the particular activity indicated by the respondents is tabulated in Table 6. Several observations are presented below:

1. The amount of time spent in program design and development is notably larger than the other seven foci, with agriculture supervisors recording 31.1% of average daily time in this activity, while distributive education supervisors showed 30.7%. Interesting variations are observed in goal-setting, problem identification and definition activities.

2. Agriculture supervisors recorded substantially less time than all others in goal-setting, while the home economics group spent comparatively less time in problem identification.

3. Business supervisors reported spending relatively little time on in-service activities, and home economics supervisors recorded the largest average percent of their time--16.5% in this activity.

4. MDTA supervisors seem to be involved in program evaluation functions a greater percent of daily work time than any other group.

The number of reported hours spent on professional activities by SDVE staff on weekends is shown on Tables 7, 8, 9, and 10. If these figures are accurate, then it must be deduced that these 105 individuals are indeed conscientious, hard-working professional workers.

In general, the weekend average daily times worked by individuals in the different positions vary. Supervisors of agriculture reported both a larger total number of hours worked and a larger total number of hours spent in professional work than any other position reported.

Directors reported a comparable total number of hours, but distribution of professional and clerical work varied significantly with all other positions. MDTA supervisors appear to work relatively fewer hours on a weekend. The percent of the four weekend days worked is comparable in all positions again with directors and agriculture supervisors reporting a larger percent worked.

More time was spent on weekend days in planning, attending professional meetings and travel activity while relatively little, if any, time was spent in financing or staffing activities. Directors appear to spend more time in travel on weekend days than people in other positions.

Results from this study would not appear to confirm the basic premise--that State Division of Vocational-Technical Education professional staff spend more time in regulation activities than they do in leadership-change activities. However, it must be fully recognized that the results obtained were the perceived use of time by respondents. Thus, it is moot whether or not these professional personnel actually spend as much as 27% of their time in program design and development and only 5% of their time in compliance-checking.

This pilot study has demonstrated the practicality and usefulness of an instrument such as, the "Personal Record of Work Activity" which was designed for this project. Analysis of SDVE professional staff positions is an exceedingly important task. Indeed, a complete and comprehensive description of staff activities is a necessary ingrediant for improving state agency administration of vocational-technical education.

The experience gained in designing and applying this instrument suggests that continued investigation can prove productive--that valid and reliable techniques and procedures for analysis of professional staff activities in state divisions of vocational-technical education can be developed.

VI. DEVELOPMENT OF A FORMAT AND CRITERIA FOR SELF-ANALYSIS OF STATE AGENCIES FOR VOCATIONAL-TECHNICAL EDUCATION

A. Introduction

Dr. Allen Lee, Project Director, personally assumed major responsibility for the design and implementation of this study. Staff members who greatly contributed to the development of the instrument were Dr. Frank Bennett, Dr. Boyd Applegarth and Dr. John Nasman. Dr. Edward E. Holt, along with Dr. Lee and others, prepared and supervised the field testing of the Format and Criteria in the State of Pennsylvania. Dr. John Struck and Dr. Paul Schalles of the State Division of Vocational Education of Pennsylvania conducted the field test.

The Committee of Consultants was composed of the following:

- Dr. James Ellingson, Director of Instruction, Oregon State Department of Education
- Dr. Arthur Hearn, Professor of Education, University of Oregon
- Dr. Howard Horner, Deputy Superintendent, David Douglas Schools (Portland)
- Dr. William Loomis, Director of Vocational Education, Oregon State Department of Education
- Dr. Henry TenPas, Professor of Agricultural Education, Oregon State University

The Problem

In recent years, there has been nationwide concern about the respective roles of state and federal agencies; the fragmentation of responsibility for education on both state and federal levels; the organization, financing and efficiency of educational institutions; the actual or imagined abdication of some state responsibility for government; the suggested dangers in the growth of federal power centralized in Washington; the use of interstate compacts to solve multi-state problems; and the need for change and improvement in state education leadership.

Many politicians, political scientists and journalists would have us believe that state government is dying. If we go much further, warns Senator Strom Thurmond, "in a few years, the states will be nothing more than territories."

Thomas Jefferson warned that the only way to prevent the encroachment of federal power into areas beyond its proper sphere, is to strengthen state governments. During a reapportionment debate in August 1966, Senator Everett Dirksen suggested that soon "the only people interested in state boundaries will be Rand-McNally."

A good example of the need for change and improvement in state governments today is the current status of public education organizations, which have more often than not just grown "like Topsy." Throughout the fifty states, one can observe a hodgepodge of arrangements, influenced by a variety of vested interests and moving with some lack of coordination.

An assumption is that many functions related to education which cannot be efficiently and appropriately performed at the local district level can best be fulfilled at the state level. Concurrently, strengthening and improving the state agencies for education offers the greatest potential for needed improvement of educational programs in general. State education agencies are in a position--currently and even more so potentially--to exert the greatest impact and influence upon education in the classrooms of the Nation. These agencies have, to widely varying degrees, only approached their potential.

Evaluations of state agencies of vocational education go on continuously, formally and/or informally. They evaluate themselves. They are evaluated by a variety of professional educators. The evaluations which determine the functions and the resources of these divisions are made by the electorate or their representatives in legislatures and governing boards. Evaluations determine the course public education will take. Evaluations made primarily by "outsiders" are too often inadequate, inaccurate and ineffective for several reasons. The state agencies know more about their own strengths and weaknesses and often are in an optimum position to bring about change; hence, there is need for systematic self-analysis.

An informed and public-spirited staff is potentially the most capable and the most trusted group in a state in the development of policy and program. To become such a capable and trusted staff, there must be broad vision, many contacts, time for discussion and reflection and willingness to assume initiative boldly. An evaluation should be realistic, not defensive. It should be geared to state needs, not the desire of individual staff members. It should lead to requests for personnel and funds to do the job that needs to be done.

Such a self-analysis operation, however, should be thorough, carefully planned and systematically conducted with care. Many other kinds of agencies have benefited for years from formally, carefully designed procedures and criteria appropriate to their own agency, but nothing comparable was available for state Divisions of Vocational Education.

For example, secondary schools have had "Evaluative Criteria," and college and university departments of education have had NCATE.

The need has been for a procedure (format) and criteria which were appropriate and flexible enough to meet a wide variety (50 states) of situations, but still provide organization and guidelines for an effective and sophisticated self-study by state Divisions of Vocational Education.

Objective

The objective has been to design, develop, field-test and begin refinement of an instrument (Format and Criteria) specifically to meet the needs for self-analysis by state agencies for vocational-technical education. The intent was to provide a flexible instrument and not to prescribe or bring into being any single type of administrative pattern.

B. Method

The investigation began with the assumption that the hard core of guiding philosophy for the procedures and criteria for the self-analysis instrument should be strongly influenced by currently active leaders (state directors) of vocational-technical education throughout the United States--but this should not be done in isolation. Rather, the approach should be interdisciplinary and should utilize the consortium procedure.

With these assumptions in mind, the matter was discussed in detail with the two national advisory committees. In line with their advice a small consulting committee was then selected to work closely with the Director, concentrating upon development of the contemplated instrument.

A Workshop was planned and conducted with participants, discussion leaders and speakers including state directors of vocational education, teachers, lay persons, management analysts, economists, political scientists, university personnel, state department of education personnel, state board personnel, and others.

The purpose of the Workshop was to establish some guidelines, achieve orientation, and identify a mass of raw material to be sifted and refined for use as a nucleus for procedures and principles to be included in the initial drafts of the planned "Format and Criteria for Self-Analysis by State Agencies for Vocational-Technical Education."

Prior to the Workshop and periodically thereafter, related literature was reviewed in considerable depth.

Following the Workshop, the results were reviewed by the national advisory committee of state directors of vocational education. Materials were then classified and refined by one staff member, after which the small consultant group composed of two state directors of vocational education, a school superintendent, two university professors and a state department of education director of instruction proceeded to develop an initial draft.

The initial draft and several succeeding ones were reviewed, discussed, and revised through many individual and group discussions. A management analyst did concentrated work on one section. Copies were sent to state directors of vocational education throughout the nation for suggestions.

Eventually a draft was deemed in minimum stage of development for a full-scale field-test. The field test was successfully completed in June of 1967, having achieved two purposes:

a. The instrument was field-tested to gain insights for refinement and further development

b. Service was provided to the cooperating State Division of Vocational Education (Pennsylvania) whose staff devoted several hundred man hours to the effort through the involvement of a steering committee and numerous other staff committees. (They will assist with forthcoming refinement of the instrument.)

The field test followed the pattern of:

- a. Preliminary discussions with top administrative personnel including the chief state school officer and the state director of vocational education
- b. orientation of staff
- c. designation of co-chairmen (one representing the University and one the Division)
- d. designation of a steering committee
- e. designation of staff committees
- f. preparation of preliminary staff reports
- g. designation of a visiting committee
- h. review of staff preliminary reports by the visiting committee
- i. on-site observation, interaction and interviews by the visiting committee
- j. preparation of the visiting committee report

Details on the above procedure are contained in Appendix VI of this report. (The revision of the instrument, based on the findings of the field test, began too late to be here reported, but will be included in subsequent reports of related activities.)

C. Results

These may be summarized by stating that a "Format and Criteria for Self-Analysis by State Agencies for Vocational-Technical Education" was designed, developed, partially refined and initially field-tested.

It is expected that it will be applied to a number of states during the next year and be further refined during the process.

A sample of the instrument which was utilized for the field tests and which will soon be further developed and refined is attached to this report. (See Appendix VI.)

D. Discussion

In general, the method and procedures followed in the design and development of the instrument were quite adequate; however, there has been insufficient time (and this was anticipated) to complete the task and considerable work remains to be done.

The Project staff found tremendous interest (in this development) evidenced by vocational-technical personnel in state and other agencies. No less than twelve states have offered cooperation in field testing.

The basic procedures incorporated in the instrument appear to be most desirable and adequate. The basic pattern or grouping system for criteria appears sound. This includes somewhat flexible criteria for five areas:

a. Philosophy and Objectives
b. The State Board and Legal Bases
c. Organizational Structure and Relationships with Others
d. Administrative Functions (including policy, finance, staffing, organizing, directing, promoting, communicating, researching)
e. Individual Program Areas

Although the procedures (format) aspect of the present draft appear relatively adequate, the sections on criteria need much more sifting, clarification and refinement.

The full-scale field test in Pennsylvania, the several discussions with the two national advisory committees, the many discussions with state directors of vocational education, the conferences with chief state school officers, the sessions with state board and local school representatives establish beyond doubt the prevailing belief that a need exists and the opinion that that development of the "Format and Criteria" is needed and is proceeding generally in the right directions.

Although the staff had not previously recognized this potential, the Advisory Committee (state directors) noted that in addition to being used for periodic, full-scale, formal self-analysis, the "Format and Criteria" should be of equal or greater value for use on a year-around continuing basis as a "bible" or guide for new and old professional staff of state agencies, for board members, for students and for others interested in the administration of vocational-technical education.

The original objectives encompassed the design and development of a Format and Criteria for self-analysis--in the belief that such an instrument would facilitate the improvement vocational-technical education through improved state-level administration. This belief has been solidly reinforced by experience to date.

The development of the instrument has prompted, periodically, some discussion of accreditation. There appears to be a preponderance of sentiment (upon the part of state directors and others) that accreditation of these state agencies is neither feasible (because of inherent wide variations among the states) nor desirable. Hence, the use of the instrument here designed and being refined is not intended for any potential accreditation purposes.

VII. ANALYSIS OF EXPENDITURES FOR VOCATIONAL-TECHNICAL EDUCATION PROGRAMS UNDER THE STATE BOARD OF VOCATIONAL EDUCATION

This phase of the Study of the Administration of Vocational-Technical Education at the State Level is an analysis of expenditures for vocational-technical education programs under the direction of the State Board of Vocational Education. The tables presented are rather voluminous and often complex. This is because large amounts of funds are involved in all fifty states and for a myriad of activities under varying conditions. This is by no means an exhaustive analysis. Time did not permit and often accounting and reporting practices differed from state to state to such an extent that it was very difficult to make exact comparisons. It is believed, however, that some of the observations made will be of value to state and Federal administrators. It is also believed that state administrators who desire may make additional analyses which could be of value to their specific state.

The researcher responsible for this study was Dr. John G. Ross. Dr. Edgar Morphet and Dr. J. Chester Swanson were closely associated with the study. Many state directors of vocational education and their fiscal officers gave very valuable assistance.

A. Introduction

This analysis of expenditures for vocational education focuses upon the expenditures for vocational education through the State agency for those programs which are operated in public schools and related to Federal funds provided to states for this purpose. Attention is given to the source of these funds from the Federal government, state government and local school districts.

Some information is presented for all fifty states. A more detailed study is made of twenty-four states. It was planned to make this detailed study of all fifty states, but it was not possible to secure all the necessary data during the initial period of this project. The detailed study is essentially a comparison of expenditures for 1962-63 and 1965-66.

Public Law 88-210, the Vocational Education Act of 1963, became law in December 1963 and the first appropriations for the act were made in the summer of 1964. Therefore, there was no financial impact from this act during school years 1962-63 and 1963-64. Not all states received their total allocation of funds under this act in school year 1964-65. School year 1965-66 was the first year in which all states received their normal allotment funds from the Federal government under appropriations of the new law.

Background

During the past decade there has been increased concern throughout the nation over efficiency and economy in educational expenditures. This concern has led to widespread questioning of many aspects of education, including (1) state plans for financing schools, and, (2) the role, functions and fiscal support of state education agencies. Vocational education has not been excluded from these questions.

Into this situation the Vocational Education Act of 1963 was introduced, together with a general belief that vocational education is an important contributing factor to economic growth and development at national, state and local levels. These new factors required response by the states with respect to both the financing and administration of vocational education while the basic situation demanded change from existing patterns. Neither the nature nor the extent of the changes (if any) could have been predicted with confidence. It was in this general setting that the present study sought to identify the current status of expenditures for vocational education and such changes as have emerged during the three years since 1963.

Fiscal practices comprise a particularly important aspect of state administration of vocational education. The degree of importance may be inferred from the following: (1) state administration of vocational education has, to a large extent, been concerned with allocating state and Federal funds in order to promote desired practices and programs; (2) somewhat similarly, when Congress decided in 1963 that improvements in vocational education were needed, the means chosen to bring them to pass was an increase in Federal funds and considerable broadening of the purposes for which the funds could be used; (3) the states' responses to the 1963 act and their practices with respect to vocational education are probably reflected more meaningfully in their expenditures than in their "Revised Plans" and other pronouncements; (4) the expenditures for vocational education provide important background for consideration of Federal-state and state-local fiscal relationships, both of which appear to be in transition.

For these and other reasons it seems important to have undertaken at this time a study of the expenditures for vocational education and of the financial support of state agencies for the administration of vocational education.

Objectives and Limitations

General objectives of the expenditures study were:

1. To collect and analyze information pertaining to expenditures for vocational education in 1962-63 and in 1965-66.
2. To identify trends and developments in expenditures since the Vocational Education Act of 1963, and to compare these with the experience during the 10 to 15 years prior to 1963.
3. To begin to assess the significance of these trends and developments.

The study focused upon conditions and expenditures having special relevance for state-level administration. Specifically it was concerned with:

1. State expenditures in support of vocational-technical education programs including state funds for local, state or area vocational schools, colleges or institutes.
2. The financing of state agencies for vocational education, including agencies for administration and supervision, teacher education and research.

Some important issues had to be excluded from the study or touched upon only peripherally. Among these were:

1. Policies and practices for the distribution of Federal and state funds to local school districts.
2. Issues related to returns on investment cost/benefit in vocational education.
3. The adequacy of the financial support of vocational education. (This has not been measured against any criteria.)

4. Expenditures for vocational programs in schools, colleges and institutes. (These have been dealt with only peripherally. They are included in the total funds expended for vocational education, which total was used as a base in determining the percentage devoted to state agency services.)

Relations to Other Aspects of the Study

The fact that the expenditure study was done as part of a broader study has several significant effects upon it.

First, as previously noted, the objectives and focus of the study were limited by the general concern with administration at the state level.

Second, because of limitations of time and staff most of the data-gathering interviews had to be done by staff members engaged in collecting information for other aspects of the total study.

These and other limitations did not permit the pursuance, in depth, of many other important issues related to finance. Certain limitations of time and personnel did not make it possible to study in detail more than 24 states during the period of this project.

B. Method

Procedures

Detailed planning for the finance study began on July 1, 1966, when a staff member was employed to take major responsibility for that phase of the study.

Planning. The initial planning involved: (1) identification of the data needed and the sources from which they could be secured, and (2) development of plans for data gathering and for analysis. The data which were determined to be needed are set forth in the Tabular Summaries of Data at the end of this report. With respect to sources of data it was determined that the financial reports to the Office of Education, Forms 4042, 4043, 4044 and 4220, for each state for the year 1964-65,

1965-66 and their earlier version for previous years would be needed.*
However, it became evident that the data in these reports would need to be checked with authorities in each state and that modifications would be necessary.

Plans were made for interviews in each state with the person responsible for preparing the annual financial reports and with such other persons as might be necessary or helpful. Persons interviewed usually included the State Director of Vocational Education, or his chief deputy, and a person in the state School Finance Office.

After the first trial interviews, it was evident that all available corroborative information should be at hand during the interview to reconcile many data which appeared to be conflicting. Such corroborative information included: (a) amounts and distribution procedures related to state school aids for 1962-63 as set forth in a study by Munse† ; (b) the same information updated to 1965-66 for nine states as published by the USOE in a series of individual state documents; (c) amounts appropriated by the state legislatures for vocational education and related purposes as set forth in the statutes of each of the states for both of the years in question; and (d) income, expenditures and enrollment data for each state and for all states together at five-year intervals during the period from 1948 to 1963 as set forth in the Digests of Annual Reports of State Boards for Vocational Education.

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* Form 4042, Financial Statement of Federal Funds for Vocational Education; Form 4043, Expenditure of Funds for Vocational Education by Program; Form 4044, Expenditure of Funds for Vocational Education by Purpose; Form 4220, Project Status and Expenditures of Vocational Area School Construction. The reports were developed and used for the first time for school year 1964-65 by the U. S. Office of Education. Published by the U. S. Government Printing Office, Washington, D. C.
Digest of Annual Reports of State Boards for Vocational Education. U. S. Office of Education, U. S. Government Printing Office, Washington, D. C.

† Munse, _____, State Programs for Public School Support. U. S. Office of Education OE-22-23, U. S. Government Printing Office, Washington, D. C.

An interview guide was prepared to include questions to be asked in all states and a summary of relevant data from the annual reports for each state together with summaries of the corroborating information referred to above. Work-sheets, tables and questions to be considered were prepared for analysis of the data.

Data Gathering. The procedures for data gathering were touched upon in the section above. These procedures are described here in greater detail for each of the major types of data:

1. Amounts and sources of funds for the State Division of Vocational Education were derived from the amounts reported on the various pages of Form 4044, line 2. These totals as confirmed or modified in the interviews were taken to be the expenditures of the State Divisions of Vocational Education.

2. Amounts and sources of funds for State Teacher Education Institutions were taken from the various pages of Form 4044, line 3, and the amounts, if any, for "research" were separated.

   After checking the interviews as to the nature of the activities supported by these funds, any necessary modifications in the figures were made and the remaining totals were taken to be the amounts for Federally aided teacher education programs by state teacher education institutions.

   In no case did these amounts reflect the whole cost for educating teachers of vocational subjects in these institutions. Nor was it possible to identify the costs of in-service teacher education provided by school systems or by state supervisors and consultants in the course of their other duties.

3. Amounts and sources of funds for vocational education research by state agencies were taken from amounts reported for this purpose on the various pages of Form 4044 and were checked in the interviews.

   Information about the nature and purpose of the research was requested and an open-ended question was asked concerning any other vocational education research activities by state agencies (especially those influenced by Research Coordinating

Units) which were not included in those reports. In this way the amounts and sources of support for state agency research were derived.

4. Amounts and sources of support for capital outlay were determined as follows: expenditures for instructional equipment as reported on the various pages of Form 4044 were totaled prior to the interviews.

   In the interviews, the amounts, if any, of these expenditures which were made by an agency other than a local school district were identified so that they could be treated as funds of the agency which actually spent them.

   Expenditures for construction as reported on Forms 4043 and 4220 were identified prior to the interviews and the interviewees in each state were asked if there was any additional construction (such as of technical institutes or vocational facilities in community colleges) or if there was any other reason for modifying the reported figures.

   The resulting figures are at best approximations. They reflect the costs of construction projects supported in part by Federal vocational education grants or by special state appropriations. They do not include expenditures for construction of vocational education facilities by local districts or community colleges solely from local funds or from funds not earmarked for vocational education.

5. Amounts and sources of funds for current expenses of vocational programs in schools were estimated as follows: expenditures for vocational programs by local boards of education as reported on the 4044 forms were taken as the starting point.

   These amounts were augmented by all or part of the expenditures reported for vocational counseling and guidance to the extent that such expenditures were identified in the interviews as having been for services in schools.

   Inquiry was also made in the interviews concerning the recurrent operating expenses of state vocational schools or of programs not included in the annual reports. Information concerning expenditures for state schools or institutes or for vocational programs in community colleges was not always available to the interviewees, nor did the statutory appropriations always provide the information desired.

It became clear that the current operating expenditures for vocational programs were almost always under-reported. In some cases, school districts chose not to report their programs and expenditures because of the small amount of reimbursement that would be provided. Others chose not to comply with some requirement which they did not consider to be essential. Hence, their vocational programs and expenditures were not reported--although they may have been substantial.

In every state where interviews were conducted, the districts which did report failed to include any part of the cost of administration, building maintenance and operation, fixed charges, etc. because the "matching" requirements were met without having to account for such additional costs.

Analysis. The procedures used for analysis of the data are implied in the tables which are a part of this report and in the findings which are set forth below. However, before entering the data in the various tables and computing the percent of total and percentage increase for each of the agencies, functions and funds, it was necessary to confirm the meaning and reliability of the data gathered.

The major difficulties encountered were in determining the amount of "state funds" used for vocational education.

Different states frequently used different definitions of state funds in their reports to the Office of Education, and the amounts they reported did not always agree with the information provided by state school finance officials. For this study the following (and only the following) were identified and classified as "state funds":

1. Amounts appropriated by the state legislature from non-Federal revenues and used for (a) the state division of vocational education, (b) reimbursement of specific vocational education expenses by local districts, and (c) construction or operation of state or area vocational schools, colleges or institutes.

2. State funds used by state teacher education institutions for

teacher education programs partly supported by Federal vocational education funds.

3. State funds used by state universities or other state agencies for vocational education research.

Some states had included as "state funds" an estimate of the amount distributed as vocational education units through the foundation program. These amounts had to be identified and deleted from the reported amounts of state funds. Some states did not include in their reports any expenditures for operation or construction of state vocational schools or institutes where these were not under the control of the State Director of Vocational Education. These amounts had to be added to the reported amounts of state funds.

In most states, appropriations for community colleges or other junior colleges did not identify amounts for vocational-technical education. In only one state (and there only with respect to construction funds) was state aid for junior colleges identified as for vocational-technical education.

It was, therefore, impossible to include state funds devoted to vocational-technical education in junior colleges; although in many states such programs were expanded very rapidly during the years under study.

C. Discussion of Findings

This study of the financial aspect of vocational-technical education has been limited largely to the expenditures for these educational services. The emphasis has been further limited to activities closely related to the state agencies responsible for vocational education.

Increasing Expenditures and the Source of Funds

It is quite evident that expenditures have been increasing from all three of the major sources of funds. The following tabluation indicates these trends. (See Tabular Summaries of Data, Tables 1 to 4.)

	School Year 1962-63		School Year 1965-66		Percent
	Amount (in thousands)	Percent	Amount (in thousands)	Percent	Increase 1962-63 to 1965-66
Federal Funds	$ 53, 322	19%	$234, 585 215, 834	29%	340%
State Funds	109, 239	36%	215, 834	27%	98%
Local Funds	141, 633	47%	347, 389	44%	145%
Total	$304, 195	100%	$797, 809	100%	164%

Notes: (1) These totals do not include expenditures made in the Canal Zone, Puerto Rico, Guam or the Virgin Islands.
(2) Totals may not be exact due to rounding of numbers to the nearest thousands.

It often has been said that the Smith-Hughes Act of 1917 and the subsequent Federal vocational acts provided "seed" money to motivate more and better vocational education services within the public schools. Enrollment reports and research studies can be interpreted as indicating that this has been true.

Between 1919-20 school year and 1965-66 school year, the trend in source of funds can be tabulated as follows (from Tabular Summaries of Data, Tables 1 to 4, and annual reports for school years 1919-20 and 1949-50):

Percentage Distribution--Source of Funds

School Year	Federal	State	Local
1919-20	29%	31%	40%
1949-50	21%	31%	48%
1959-60	19%	35%	46%
1962-63	18%	37%	45%
1965-66	29%	27%	44%

These figures indicate a remarkably stable distribution, especially when it is taken into account that the total expenditures increased from 8 1/2 million dollars (1919-20) to almost 798 million dollars (1965-66). The constant percentage for the local school districts and the recent large increase in the Federal source are the most notable features of this tabulation. The Federal increase was due to the new Federal law and the Congressional appropriations.

Between 1962-63 and 1965-66 the Federal funds have increased from 55 million dollars to 235 million dollars--an increase of 330%.

The increase in state funds during this period has been significant even though the total share of the states has decreased. The increases since 1962-63 have been as follows (see Tabular Summaries of Data, Tables 1 to 4):

21 states increased more than 100%.
11 states increased between 50% and 100%.
14 states increased between zero and 50%.
4 states decreased.

The increase in local school district expenditures in states has been even more impressive (see Tabular Summaries of Data, Tables 1 to 4):

Local schools in 28 states increased over 100%.
Local schools in 12 states increased between 50% and 100%.
Local schools in 8 states increased between 25% and 50%.
Local schools in no states increased less than 23%.
(In 4 states, the local schools increased more than 500%.)

These impressive increases in expenditures of both state and local school funds would be much more impressive if the total expenditures were known.

At the state level it has not been possible to obtain the following type of expenditures for vocational education:

1. The state funds allocated to local school districts as a part of the general distribution of funds for teachers or classroom units and used for vocational teachers or classrooms.

2. A proration of general administrative, supervisive or other services applicable to vocational education.

3. The expenditures for vocational education activities in which Federal funds are not included.

At the local school district level the funds used for vocational education and not reported are even larger. It has not been possible to obtain the following type of expenditures related to vocational education:

1. Expenditures for vocational education programs for which Smith-Hughes, George-Barden or P.L. 88-210 funds were not used.
2. Many expenditures for certain types of supplies and equipment.
3. Many expenditures for operation and maintenance of buildings and grounds.
4. Expenditures for much of the administration, supervision and auxiliary services.
5. Often large expenditures of other Federal funds (ESEA, OED, MDTA, etc.) with related local expenditures were not available.

This information points to the fact that we do not know the total expenditures for vocational education in the public. A new system of accounting and reporting would be necessary to make this information available.

Trends in the Distribution of Expenditures for Major Agenices and Activities

The major feature of the accounting and reporting of vocational education expenditures from 1918-19 to 1963-64 has been the funds used for specific occupational categories. There have been some data related to administration, supervision, teacher education, and instruction. This reporting was made necessary by the provisions of the Smith-Hughes and George-Barden Federal legislation. Since the Vocational Education Act of 1963 (P.L. 88-210), reporting practices have changed and much more details are available. Since these accounting practices are so new it is not possible to develop trends from the annual reports. Munse made a study which included expenditures by activities for vocational education for school year 1962-63 (see footnote, page). With this as a base (it was a convenient year since it was one of the final years before the larger appropriations) comparisons were made between 1963-64 and 1965-66. This procedure required interpretations which necessitated personal interviews with the fiscal persons responsible in state departments. Time did not allow these individual state studies in all states. Such studies were completed in 24 states and are reported in the Tabular Summaries of Data, Tables 5 to 18.

These tables show that expenditures in 1964-65 and 1965-66 increased by large amounts and that expenditures for certain activities were quite different from previous years.

The increase is readily explained by the appropriation of the funds for Public Law 88-210. The act was signed by the President in December 1963. The first appropriation made by Congress was in the summer of 1964. By the time the states had developed plans for the use of these funds and the U. S. Office of Education had issued regulations for their use, the school year 1963-64 was over and school year 1964-65 was in progress. In this year 1964-65, the Federal funds distributed to the states increased by 184% over the previous year, and in the following year this aid was further increased by 53%. This increase in Federal funds motivated increased funds from state and local school districts to produce the total increase of 265 million dollars between 1963-64 and 1964-65 and another large increase of 205, 046 million for 1965-66.

The increases for various activities are even more spectacular. They will be discussed as these activities are discussed.

It is interesting to note the wide variation in the percent of increase of Federal funds to the different states in years 1964-65. It varies from 4% for Alaska to 228% for New Hampshire. The following factors contribute to these differences:

1. The formula for the distribution of funds under the new act (P.L. 88-210) is quite different from earlier acts. It is based largely on certain population ratios and on certain per capita income data.

2. Some states were not able to develop state plans and obtain legislative or administrative action in time to receive all of the funds which could be allocated to their state. It will be noted that these states received a proportionately larger increase in school year 1965-66.

3. Since not all states used all of their funds in 1964-65, it was

possible to transfer some funds to states which could use them. These states received a proportionately smaller increase the following year.

Increase in State Expenditures for Vocational Education

The funds directly derived from State government sources increased by 107 million dollars (97%) between 1962-63 and 1965-66. The range extended from two states with decreases to 21 states with more than 100% increase. (See Table 3.) In many respects this comparison in state funds from year to year has little meaning because it is almost a bookkeeping figure as certain functions shift between states and at times between years in a given state from local to state expenditures. It is more exact to add the state government source funds to local school district funds, thus obtaining an overall amount of funds from within a state expended for vocational education.

A comparison of the relatively low rate of increase in state funds for vocational education between 1962-63 and 1965-66 with the high rate of increase in Federal aid during the same period should be avoided at this time because the full amount of the state and local contributions to vocational education programs is not known. It has not been possible in this study to identify the increases in general purpose state aids which may have been used for vocational education by local school boards, nor has it been possible to identify amounts devoted to vocational-technical education in community colleges. The limited evidence available indicates that the increase in state and local funds for such purposes was substantial, although possible not yet as great in the aggregate as the increase in Federal aid for vocational education.

Expenditures for Operation of State Divisions of Vocational Education

The data for this analysis is taken from the Tabular Summaries of Data, Tables 7, 13, 14, 15, 16, 17 and 18 of the study of 24 states. From 1962-63 to 1965-66 the median increase in expenditures for all state department vocational education agencies was the least of any of the agencies or activities identified in the study. However, the increase was neither insignificant nor was it consistent. The median increase among the 24 states studied was 57% but the range was from 1% increase for Maine to 675% in New York. (See Tables 7 and 16.) The large increase in New York State came largely from state funds with only 14% from Federal funds in 1965-66.

The expenditures for operation of the state division of vocational education has a range of from 2% to 10% of the total expenditures, the median is 6%. (See Table 13.) The states with the larger enrollments and number of teachers have the smaller percentages (1% to 5%). The small states in general use larger percentages for operation of their state divisions. This might be readily explained by the fact that certain basic costs are the same regardless of the size of the state program.

The Federal funds used for state division of vocational education operation decreased from 11% to 5 % in the median state use of these funds. (See Table 14.) The state funds expended for this activity decreased from 11% to 9% between these years. (See Table 15.)

Expenditures for Teacher Education

The total expenditures reported for teacher education ranged from no reported expenditures in one state to 458 thousand dollars in another for school year 1962-63. The median state expended 135 thousand dollars. (See Table 8.) For school year 1965-66 the range was from one thousand dollars to one million dollars with the median 175 thousand dollars. Federal funds supplied 42% in 1962-63 and 45% in 1965-66. The range of change during these years was from -28% to +233% with a median change of +72%.

The reported figures do not, however, reflect all expenditures--probably only a small portion--for educating teachers of vocational subjects. The figures included only the expenditure of certain in-service teacher education programs and a few courses for teachers-in-preparation in the methodology of teaching vocational subjects in many states. The relatively unchanged ratio of state to Federal funds for these programs appeared to reflect the practice of reporting enough state funds for those programs to more than match the Federal aid.

The median state expenditure for teacher education was 3% of the total expenditures with a range of from zero to 9%. (See Table 13.) There was a median increase of the use of Federal funds for teacher education of 71% during the 1962-63 to 1965-66 period. The state mean expenditure increased 67% during the same period. (See Table 18.)

Expenditures for Research

Table 9 presents data related to research in vocational education. The major feature of this table is the lack of data. Only 4 of the 24 states studied showed any expenditures for research in 1962-63. The amounts were two thousand to 85 thousand dollars. In 1965-66 eleven states reported expenditures ranging from five thousand to 165 thousand dollars. (See Table 9.) In no state was this more than 2 percent of the total expenditures. (See Table 13.) The total increase between years 1962-63 and 1965-66 was from 116 thousand to 680 thousand dollars, an increase of 486 percent.

The work classified as research consisted, in 1962-63, of curriculum development projects in teacher education institutions in three states and a survey of vocational education in one state. In 1965-66 only one state reported a study initiated and carried through at the state level--a survey of vocational education in the state. All others were local or "cooperative" projects (local with some state agency coordination) and appeared to have consisted of local surveys of needs for vocational programs, local curriculum development projects or experimental instructional programs.

Research Coordinating Units were reported to have been active in 12 of the 24 states during 1965-66 and to have been "effective" in stimulating and aiding many local and individual projects which would not have been conducted otherwise or--in the case of these studies--might not have dealt with vocational education. Six additional states reported that Research Coordinating Units became active in 1966-67. Only two reported that there was no Research Coordinating Unit in the state. Four did not report on this question.

Funds for the Research Coordinating Units were completely Federal funds and at times came to a state completely outside of the state department of education.

Expenditures for Capital Outlay

Expenditures for capital outlay for vocational school facilities are presented in Table 11. The most unique feature of this table is the last column, indicating percentage increases. Many of these are five-number figures, an abnormal figure for percentages. These large percentage figures are caused by two factors: the base figures were very low because very few capital expenditures were reported and these were never for building construction in 1962-63; secondly, many states decided that their most urgent need in the early years of the new legislation was construction of buildings. These expenditures are large amounts. The median expenditure for capital outlay for 1962-63 was 200 thousand dollars which increased to a median of approximately two million dollars for 1965-66 in those 24 states. The range in 1965-66 was from 360 thousand to nineteen million dollars.

The median state spent 5% of its total funds for capital outlay in 1962-63 and 24% for 1965-66. (See Table 13.) The median use of Federal funds for capital outlay was 37% in 1965-66 and the range was from 14% to 68%. (See Table 14.)

The Use of Federal Funds

The largest part of the great increase in Federal aid for vocational education was used for the construction and operation of vocational programs in schools. The portion devoted to state agency services declined from 18% to 8% between 1962-63 and 1965-66 in the median state among the 24 studied. While the increase in Federal funds used for capital outlay was very great (1135%) the increase in Federal funds for the current expenses of vocational schools and programs was significant (153%). In 1965-66, 92% of all Federal aid for vocational education was used for schools (either for capital or current expenses) in the median state. No state among the 24 studied used less than 69% of its Federal aid for this purpose. (See Tables 10, 11, 14 and 17.)

D. Conclusions and Suggestions

Accounting and Reporting in Relation to Emerging Developments

School accounting and reporting serves to provide evidence that public funds have been received and used in accordance with law and good practice, and to provide some information for fiscal planning and appraisal. It is with respect to the second of these purposes that emerging developments are relevant.

Traditionally, "fiscal planning and appraisal" has consisted largely of preparing the annual budget for a school system and comparing expenditure levels from year to year and among similar school systems. Occasionally, forecasts of requirements and revenues over a number of years have been made. There have been some cost-quality studies in which the total expenditures of school systems or the expenditures for such components as teachers' salaries, classroom supplies or libraries have been considered in relationship to some measures of pupil performance, community satisfaction or teachers' innovativeness. To facilitate such planning and appraisal activities it is essential that accounting definitions and classifications be reasonably uniform and that they be applied to the three functions of budgeting, accounting and reporting. This stage of development was reached, or at least approximated, with respect to general school accounting when a handbook for fiscal reporting was widely adopted following its publication in 1957 by the U. S. Office of Education.

Since the traditional and still basic goal of education--the preservation of a dynamic free society--provided no guidance as to the amounts or kinds of education needed, evaluation and planning generally have been done in the light of such criteria as pupil performance tests, years of schooling provided, instructional practices used, and even community satisfaction.

In order to analyze fiscal inputs in relation to these outcomes, accounting systems were considered adequate when they separated expenditures for current and capital costs, educational and auxiliary services and for the functions of administration, instruction, building maintenance, etc. However, there is currently emerging a new concern that educational planning be characterized by (1) more insightful goal identification, (2) use of more concrete information as a basis for decision-making, and (3) studies in which the more subtel input-output factors are related in analyses of alternative programs and uses of resources. These concerns have been consolidated in the planning-programming-budgeting system, or PPBS, which has been derived from Operation Research and Systems Analysis.*

Concomitant with the planning-programming-budgeting system, there have been a number of developments related to the economics of education which support the view that returns on many aspects of the investment in education are measurable and can be compared with the returns on other uses of resources and that, perhaps, returns on alternate educational uses can be compared. Regardless of whether these developments continue in the form and directions indicated here, it does appear inevitable that pressures will be increased for more comprehensive educational planning, conscious attention to goals and their achievement, and the systematic weighing of whatever information is relevant.

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* U. S. Bureau of the Budget: Bulletin 66-3, Planning-Programming-Budgeting, Oct. 12, 1965. U. S. Government Printing Office, Washington, D. C.

The major implications of these developments for reporting procedures for vocational education financing justify the following suggestions:

1. States and Federal representatives should work together to develop standard definitions and terminology related to vocational-technical education.

2. Each state should make a more determined effort to identify and outline in meaningful terms appropriate goals and objectives of vocational education.

3. Each state should establish valid procedures for measuring progress toward achieving their goals and objectives of vocational education.

4. State and Federal representatives should cooperate in establishing and implementing an accounting and reporting procedure that will assure the availability of complete information regarding the expenditures for, and costs of, all major aspects of vocational-technical education from Federal, state, local and other sources. This information should include at least the following:

    a. All costs and revenues for vocational education should be supplied. The larger school district should determine unit costs of such programs.

    b. All vocational programs should be reported. Separate reports should be made for local and state programs not related to Federal programs under the Smith-Hughes, George-Barden or Vocational Education Act of 1963.

    c. The costs reported for each program should include amounts for administration, instruction, other pupil services, building operation, building maintenance, etc. When some of these costs are determined by pro rata allocation for several programs, the basis should be as uniform as possible.

5. Expenditures for administration, supervision, research, teacher education and other services ancillary to instruction

should be reported separately from those of the school operating agencies--whether they be state, area or local in their scope.

6. The most relevant information concerning the benefits of these programs should be reported--at least numbers enrolled, graduated, placed and continuing in the occupation, or a related occupation.
7. Information from the above accounting and reporting procedures should be utilized more consciously and meaningfully in the decision-making and planning process. This could result in a practical program-planning-budgeting system for vocational education services.

This study provides considerable evidence that of all funds expended for vocational-technical education, a very large percent is used at the point of program operation, the local school program. This is particularly true of Federal funds where 92% of all these funds were used for either school construction, program equipment, or program operation. This may be a very unique achievement for Federal funds used in all states and in such large amounts.

Suggestions for Further Study

The study of the 24 states should be made for all fifty states after one or two more years of experience in the use of their larger amounts under fewer restrictions of time limitations and program classification.

Studies should be made of accounting and reporting expenditures for all vocational education program costs.

As better information is developed as to the outcomes of vocational instruction, cost-benefit relationships should be developed and the methods of reporting made standard. Probably the place to begin such studies would be in cities with adequate and competent accounting and program evaluation staffs.

A study should be made of the policies and practices for the distribution of state and Federal funds to agencies and activities within each state.

Great strides have been made in the reporting of fiscal and enrollment data by the states in recent years. The major needs for improvements now rest with the local school district and their desire and knowledge of the use of reporting for the improvement of the decision-making process.

E. Tabular Summaries of Data

These tables provide data for all fifty states and attempt to show trends. These trends are shown for every three-year period from 1953-54 school year to the latest year for which information is available, school year 1965-66.

The data are taken from the *Digest of Annual Reports of State Boards for Vocational Education* or the more recent annual report, *A Review of Activities in Federally Aided Programs--Vocational and Technical Education*.

The most recent of these reports, 1964-65 and 1965-66, had not been printed at the time of this study and some of the data have been changed since these tabulations were made. Therefore, some lack of consistency may appear between these data and later publication of the basic reports from which these data have been taken. It is believed that these changes will not appreciably change the percentages given or make any of the conclusions invalid.

It is expected that these data will be reviewed at the time of the final publication of the annual reports and that any wide distribution of this report will not be made until any such changes have been detected and corrections made.

Some of the totals on these tables will not correspond to the totals of the annual reports because data for only the fifty states are included. (Guam, Virgin Islands, District of Columbia, Canal Zone and Puerto Rico are not included in these tables.)

TABLE 1-a

TOTAL EXPENDITURES FOR VOCATIONAL EDUCATION-- Amounts (in thousands) and Percent Increase by Triennia from 1954 to 1966

	1953-54	1956-57		1959-60		1962-63		1965-66	
	Amount	Amount	%	Amount	%	Amount	%	Amount	%
Total--All States	149,227	188,049	26	235,302	25	304,195	29	797,809	162
1. Alabama	2,858	4,500	57	5,457	21	8,626	58	18,064	109
2. Alaska	-	79	-	182	130	258	42	670	160
3. Arizona	925	1,220	32	1,528	25	2,051	34	6,180	201
4. Arkansas	2,917	3,069	5	3,483	13	3,885	12	9,158	136
5. California	9,210	11,853	29	17,094	44	23,056	35	61,068	165
6. Colorado	1,345	1,651	23	2,099	27	2,767	32	6,194	124
7. Connecticut	2,034	2,567	26	2,938	14	4,106	40	9,540	132
8. Delaware	630	702	11	783	12	1,202	54	2,445	103
9. Florida	4,215	5,725	36	8,153	42	11,207	37	30,866	175
10. Georgia	5,380	6,471	20	7,925	22	9,164	16	19,721	110
11. Hawaii	846	895	6	1,175	31	1,182	1	2,734	131
12. Idaho	812	1,014	25	1,324	31	1,650	24	2,940	78
13. Illinois	7,190	8,378	17	9,998	19	11,622	16	25,461	119
14. Indiana	3,905	4,785	23	5,844	22	6,380	9	16,042	151
15. Iowa	2,571	3,312	29	3,804	15	5,121	35	8,277	62
16. Kansas	1,502	2,327	55	2,562	10	3,029	18	7,960	163
17. Kentucky	2,226	3,108	40	4,066	31	5,942	46	13,587	129
18. Louisiana	3,863	5,487	42	6,860	25	7,876	15	14,404	83
19. Maine	492	619	26	822	33	849	3	2,579	204
20. Maryland	1,357	1,836	35	2,295	25	3,011	31	14,959	397
21. Massachusetts	5,965	7,799	31	9,247	19	11,631	26	26,415	127
22. Michigan	5,216	6,856	31	8,103	18	9,152	13	32,821	259
23. Minnesota	3,425	4,852	42	6,246	29	7,552	21	15,452	105
24. Mississippi	2,979	3,689	24	4,438	20	4,917	11	11,097	126
25. Missouri	3,361	4,008	19	4,652	16	5,604	20	17,596	214

TABLE 1- a (cont'd)

		1953-54	1956-57		1959-60		1962-63		1965-66	
		Amount	Amount	%	Amount	%	Amount	%	Amount	%
26.	Montana	740	796	8	857	8	953	11	1,200*	26
27.	Nebraska	1,259	1,578	25	1,992	26	2,145	11	4,390	105
28.	Nevada	316	531	68	738	39	1,099	49	4,763	333
29.	New Hampshire	306	451	47	628	39	783	25	3,940	403
30.	New Jersey	2,027	4,038	99	3,845	-5	5,028	31	19,566	289
31.	New Mexico	677	930	37	1,144	23	1,394	22	4,150	198
32.	New York	8,429	10,790	28	13,563	26	23,663	74	77,889	229
33.	North Carolina	5,588	6,249	12	9,428	51	13,378	42	29,676	122
34.	North Dakota	742	912	23	1,329	46	1,718	29	3,604	110
35.	Ohio	4,584	6,275	37	8,210	31	10,705	30	33,123	209
36.	Oklahoma	3,997	4,782	20	6,185	29	7,286	18	13,056	79
37.	Oregon	1,383	1,580	14	1,869	18	2,337	25	8,046	244
38.	Pennsylvania	7,823	8,949	14	9,950	11	11,864	19	40,329	240
39.	Rhode Island	335	472	41	507	7	697	37	4,044	480
40.	South Carolina	3,351	3,696	10	4,146	78	6,796	64	12,887	90
41.	South Dakota	730	867	19	1,037	20	1,105	7	3,454	213
42.	Tennessee	3,843	4,585	19	5,781	26	6,846	18	16,981	148
43.	Texas	12,808	15,089	18	19,458	29	25,178	29	56,765	125
44.	Utah	970	1,066	10	1,400	31	1,736	24	5,990	245
45.	Vermont	456	577	27	795	38	957	20	2,108	120
46.	Virginia	4,078	5,286	30	6,769	28	8,539	26	19,437	128
47.	Washington	3,325	4,070	22	5,353	32	7,679	43	14,397	87
48.	West Virginia	1,699	2,081	22	2,377	14	2,596	9	8,041	210
49.	Wisconsin	3,936	4,926	25	6,099	24	7,109	17	19,761	178
50.	Wyoming	511	671	31	760	13	763	-	1,740	128

* Estimated from 1965 data.

TABLE 1-b*

TOTAL EXPENDITURES FOR VOCATIONAL EDUCATION--
Amounts (in thousands) and Percent Increase by YEARS 1963-1966

	1962-63	1963-64		1964-65		1965-66	
	Amount	Amount	%	Amount	%	Amount	%
Total--All States	304,195	327,659	7	592,763	81	797,809	35
1. Alabama	8,626	9,977	16	14,450	45	18,064	25
2. Alaska	258	326	26	340	4	670	97
3. Arizona	2,051	2,239	9	3,697	65	6,180	67
4. Arkansas	3,885	4,282	10	6,176	44	9,158	48
5. California	23,056	24,998	8	53,878	115	61,068	13
6. Colorado	2,767	2,820	2	4,557	62	6,194	34
7. Connecticut	4,106	4,285	4	8,080	89	9,540	18
8. Delaware	1,202	1,371	14	1,811	32	2,445	35
9. Florida	11,207	12,863	15	17,815	38	30,866	73
10. Georgia	9,164	9,879	8	17,061	73	19,721	15
11. Hawaii	1,182	1,177	-1 dec.	2,081	77	2,734	31
12. Idaho	1,650	1,754	6	2,390	36	2,940	23
13. Illinois	11,622	12,910	11	16,025	24	25,461	59
14. Indiana	6,380	6,889	8	12,730	85	16,042	26
15. Iowa	5,121	5,280	3	6,761	28	8,277	33
16. Kansas	3,029	3,258	8	6,149	89	7,960	29
17. Kentucky	5,942	6,124	3	11,414	86	13,587	19
18. Louisiana	7,876	7,832	-1 dec.	10,415	33	14,404	38
19. Maine	849	951	12	1,479	56	2,659	74
20. Maryland	3,011	3,113	3	9,563	207	14,959	56
21. Massachusetts	11,631	11,676	-	16,526	42	26,415	60
22. Michigan	9,152	9,886	8	19,558	98	32,821	68
23. Minnesota	7,552	8,272	10	17,526	112	15,452	-12 dec.
24. Mississippi	4,917	5,308	8	9,471	78	11,223	18
25. Missouri	5,604	6,190	10	8,882	43	17,596	98

TABLE 1-b* (cont'd)

		1962-63	1963-64		1964-65		1965-66	
		Amount	Amount	%	Amount	%	Amount	%
26.	Montana	953	1,034	8	1,167	13	1,200+	3
27.	Nebraska	2,145	2,185	2	3,412	56	4,390	29
28.	Nevada	1,099	1,451	32	1,868	29	4,763	155
29.	New Hampshire	783	751	-4 dec.	2,467	228	3,940	60
30.	New Jersey	5,028	5,519	10	9,355	70	19,566	109
31.	New Mexico	1,394	1,394	-	3,173	27	4,150	23
32.	New York	23,663	25,237	7	69,509	175	77,889	12
33.	North Carolina	13,378	15,088	13	23,791	58	29,676	25
34.	North Dakota	1,718	1,879	9	2,754	47	3,604	31
35.	Ohio	10,705	12,402	15	24,286	96	33,123	36
36.	Oklahoma	7,286	7,178	-2 dec.	10,881	52	13,056	20
37.	Oregon	2,337	2,439	4	5,139	111	7,302	42
38.	Pennsylvania	11,864	12,325	4	18,412	49	40,329	119
39.	Rhode Island	697	740	6	2,285	209	4,044	77
40.	South Carolina	6,796	6,533	-4 dec.	9,895	51	12,887	30
41.	South Dakota	1,105	1,226	10	1,944	59	3,454	78
42.	Tennessee	6,846	7,441	9	13,591	83	16,981	25
43.	Texas	25,178	26,914	7	41,311	53	56,765	37
44.	Utah	1,736	2,001	15	4,934	146	5,990	21
45.	Vermont	957	1,062	11	1,445	36	2,108	45
46.	Virginia	8,539	9,794	15	13,900	42	19,437	40
47.	Washington	7,679	7,911	3	9,774	24	14,397	47
48.	West Virginia	2,596	2,734	5	5,163	88	8,041	36
49.	Wisconsin	7,109	7,895	11	15,962	102	19,761	24
50.	Wyoming	763	836	10	871	4	1,740	100

*This table shows the trends for the last four years. It duplicates some of the data of Table 1-a.

+Information estimated from previous year's data.

TABLE 2

FEDERAL EXPENDITURES FOR VOCATIONAL EDUCATION--Amounts (in thousands) and Percent Increase by Triennia from 1954 to 1966

	1953-54	1956-57		1959-60		1962-63		1965-66	
	Amount	Amount	%	Amount	%	Amount	%	Amount	%
Total--All States	24,803	36,268	46	44,228	22	53,322	21	234,585	340
1. Alabama	671	1,005	50	1,163	16	1,121	-4	5,357	378
2. Alaska	-	40	-	91	127	96	5	298	284
3. Arizona	170	197	16	243	23	329	35	1,979	501
4. Arkansas	492	749	52	831	11	689	-17	3,286	377
5. California	1,222	1,874	53	2,598	39	3,818	47	16,598	335
6. Colorado	217	321	48	416	30	578	39	2,285	295
7. Connecticut	257	342	33	472	38	783	66	2,388	205
8. Delaware	159	170	7	203	19	221	9	615	178
9. Florida	393	602	53	943	57	1,325	41	6,865	418
10. Georgia	721	1,075	49	1,398	30	1,541	10	6,735	337
11. Hawaii	159	182	14	212	16	215	1	999	365
12. Idaho	164	217	32	287	32	394	37	1,109	181
13. Illinois	1,099	1,650	50	1,808	10	2,154	19	9,851	357
14. Indiana	656	956	46	1,012	6	1,320	30	5,587	323
15. Iowa	555	825	49	902	9	1,418	57	3,403	140
16. Kansas	367	574	56	617	7	739	20	2,867	288
17. Kentucky	681	1,008	48	1,091	8	1,078	-1	5,266	388
18. Louisiana	492	724	47	1,053	45	1,152	9	5,134	346
19. Maine	158	215	36	288	34	263	-9	1,080	310
20. Maryland	305	443	45	544	23	703	29	3,751	433
21. Massachusetts	500	721	44	824	14	956	16	5,138	437
22. Michigan	889	1,336	50	1,709	28	2,067	21	9,580	363
23. Minnesota	572	853	49	1,117	31	1,354	21	4,709	248
24. Mississippi	614	923	50	1,035	12	1,019	-2	4,327	318
25. Missouri	696	1,055	52	1,144	8	1,354	18	5,464	204

TABLE 2 (cont'd)

	1953-54	1956-57		1959-60		1963		1966	
	Amount	Amount	%	Amount	%	Amount	%	Amount	%
26. Montana	164	206	25	222	8	257	16	*315	23
27. Nebraska	288	416	44	586	41	631	7	1,944	208
28. Nevada	134	173	29	214	24	264	23	581	120
29. New Hampshire	156	157	1	222	41	287	29	849	196
30. New Jersey	500	728	47	908	25	1,186	31	6,191	422
31. New Mexico	167	217	30	261	20	315	20	1,597	407
32. New York	1,562	2,395	53	3,006	26	3,723	24	17,136	360
33. North Carolina	958	1,419	48	1,935	36	2,236	16	8,363	274
34. North Dakota	205	275	34	347	26	452	30	1,251	177
35. Ohio	1,110	1,617	46	1,841	14	2,305	25	11,001	377
36. Oklahoma	439	658	50	882	34	961	9	3,733	288
37. Oregon	263	386	48	490	27	578	18	2,298	298
38, Pennsylvania	1,361	1,936	42	2,358	94	2,695	14	12,568	366
39. Rhode Island	115	156	36	165	6	168	2	1,152	586
40. South Carolina	492	720	46	778	8	1,224	57	4,398	259
41. South Dakota	202	270	34	291	8	342	17	1,368	300
42. Tennessee	715	1,048	47	1,264	21	1,396	10	6,148	340
43. Texas	1,249	1,836	47	2,071	13	2,250	9	14,965	565
44. Utah	166	181	9	237	31	283	19	1,426	404
45. Vermont	156	167	7	220	32	256	16	629	146
46. Virginia	643	960	49	1,177	23	1,334	13	5,656	324
47. Washington	362	568	57	706	24	1,120	59	3,614	223
48. West Virginia	414	612	48	668	9	570	-15	2,902	409
49. Wisconsin	615	937	52	1,206	29	1,622	34	5,120	216
50. Wyoming	159	168	5	170	1	173	2	611	253

* Estimated from 1965 data.

TABLE 3

STATE EXPENDITURES FOR VOCATIONAL EDUCATION-- Amounts (in thousands) and Percent Increase by Triennia from 1954 to 1966

	1953-54	11956-57		1959-60		1962-63		1965-66	
	Amount	Amount	%	Amount	%	Amount	%	Amount	%
Total--All States	53,104	65,644	24	80,041	22	109,239	36	215,834	97
1. Alabama	2,187	3,495	60	4,212	21	4,947	17	6,364	29
2. Alaska	-	39	-	88	26	112	27	187	67
3. Arizona	139	195	40	365	87	563	54	1,906	239
4. Arkansas	1,016	796	-22	856	6	1,152	35	3,162	174
5. California	643	614	-5	652	6	762	17	814	7
6. Colorado	211	273	29	328	20	461	41	435	-6
7. Connecticut	1,506	2,026	35	2,191	8	2,932	34	6,316	115
8. Delaware	304	293	-4	358	22	848	137	1,634	93
9. Florida	3,148	3,973	26	6,409	61	7,429	16	5,561	-25
10. Georgia	846	952	13	1,711	80	2,511	47	5,267	110
11. Hawaii	687	713	4	963	35	966	-	1,735	80
12. Idaho	270	367	36	503	37	637	27	682	7
13. Illinois	2,402	2,686	12	2,618	-3	2,999	15	4,720	57
14. Indiana	383	412	8	563	37	753	34	1,755	133
15. Iowa	406	427	5	529	24	1,153	18	724	-37
16. Kansas	236	281	19	324	15	399	23	909	128
17. Kentucky	347	1,941	59	2,420	25	4,628	91	6,528	41
18. Louisiana	487	603	24	716	19	955	33	644	-33
19. Maine	122	140	15	262	87	273	4	1,103	304
20. Maryland	391	528	35	725	37	1,671	30	5,532	231
21. Massachusetts	2,726	3,521	29	4,179	19	4,994	19	8,367	68
22. Michigan	1,363	1,343	-2	1,355	1	1,157	-15	3,062	165
23. Minnesota	1,298	1,885	45	2,540	35	3,009	18	4,056	35
24. Mississippi	1,078	1,215	13	1,508	24	1,620	7	2,714	68
25. Missouri	629	821	31	655	-20	850	30	1,189	40

TABLE 3 (cont'd)

	1953-54	1956-57		1959-60		1962-63		1965-66	
	Amount	Amount	%	Amount	%	Amount	%	Amount	%
26. Montana	93	103	10	120	17	160	33	225*	41
27. Nebraska	186	199	7	245	23	269	-41	495	84
28. Nevada	34	60	76	136	126	170	25	337	98
29. New Hampshire	55	47	-15	151	221	231	53	736	219
30. New Jersey	477	1,032	116	1,111	8	1,407	26	5,731	307
31. New Mexico	67	91	36	176	93	191	9	223	17
32. New York	2,724	3,549	30	4,450	25	8,241	85	29,552	236
33. North Carolina	2,878	2,931	2	4,693	60	7,410	58	14,186	91
34. North Dakota	205	293	42	360	23	469	30	1,110	137
35. Ohio	775	1,820	135	3,474	91	4,797	38	9,947	107
36. Oklahoma	792	840	10	889	6	815	-8	1,100	35
37. Oregon	436	333	-57	452	36	787	74	2,501	218
38. Pennsylvania	4,717	5,026	7	1,230	-76	1,862	51	7,120	282
39. Rhode Island	61	83	36	147	77	65	-66	2,313	3458
40. South Carolina	1,334	1,396	5	1,726	24	3,539	105	4,696	33
41. South Dakota	29	31	7	36	16	43	19	250	481
42. Tennessee	1,028	1,134	10	1,080	-5	1,396	29	5,424	289
43. Texas	10,779	12,488	16	16,482	32	21,681	32	29,330	35
44. Utah	66	76	15	75	-2	137	83	179	31
45. Vermont	68	118	74	171	45	248	45	913	268
46. Virginia	1,955	2,676	37	3,575	34	4,454	24	6,396	44
47. Washington	886	1,029	16	1,279	24	1,590	24	3,677	131
48. West Virginia	315	353	12	419	19	451	8	797	77
49. Wisconsin	281	351	25	464	32	984	112	5,477	456
50. Wyoming	48	44	-9	68	55	62	-9	57	-8

* Estimated from 1965 data.

TABLE 4

LOCAL EXPENDITURES FOR VOCATIONAL EDUCATION--Amounts (in thousands) and Percent Increase by Triennia from 1954 to 1966

	1953-54	1956-57		1959-60		1962-63		1965-66	
	Amount	Amount	%	Amount	%	Amount	%	Amount	%
Total--All States	71,320	86,138	21	111,033	29	141,633	28	347,389	145
1. Alabama	-	-	-	81	-	2,558	3058	7,322	186
2. Alaska	-	-	-	3	-	50	1567	184	268
3. Arizona	615	828	35	920	11	1,159	26	2,295	98
4. Arkansas	1,410	1,523	8	1,795	18	2,043	14	2,709	33
5. California	7,355	9,365	27	13,844	48	18,475	33	43,656	136
6. Colorado	917	1,057	15	1,355	28	1,728	27	3,474	101
7. Connecticut	271	199	-17	275	38	391	42	836	114
8. Delaware	167	239	43	222	-8	133	-40	195	47
9. Florida	674	1,151	71	801	-31	2,453	206	18,439	652
10. Georgia	3,814	4,445	17	4,817	8	5,112	6	7,718	51
11. Hawaii	-	-	-	-	-	-	-	-	-
12. Idaho	378	430	14	534	24	620	16	1,150	85
13. Illinois	3,690	4,041	10	5,571	38	6,469	16	10,891	68
14. Indiana	2,867	3,416	19	4,269	25	4,306	1	8,700	102
15. Iowa	1,609	2,060	28	2,373	15	2,550	7	4,150	63
16. Kansas	900	1,471	63	1,622	10	1,891	17	4,184	121
17. Kentucky	1,199	159	-87	555	249	236	-57	1,794	660
18. Louisiana	2,883	4,160	44	5,091	22	5,769	13	8,626	50
19. Maine	211	264	25	272	19	313	15	396	27
20. Maryland	660	865	31	1,028	19	637	-38	5,676	791
21. Massachusetts	2,738	3,557	30	4,244	23	5,682	34	12,909	127
22. Michigan	2,964	4,177	41	5,039	21	5,928	18	20,178	240
23. Minnesota	1,555	2,113	36	2,590	23	3,189	23	6,686	110
24. Mississippi	1,287	1,551	21	1,895	22	2,277	20	4,182	84
25. Missouri	2,036	2,131	5	2,853	34	3,399	19	10,943	222

TABLE 4 (cont'd)

	1953-54	1956-57		1959-60		1962-63		1965-66	
	Amount	Amount	%	Amount	%	Amount	%	Amount	%
26. Montana	483	487	1	514	6	536	4	*660	23
27. Nebraska	785	963	23	1,160	20	1,244	7	1,950	57
28. Nevada	149	298	100	389	31	665	71	3,845	478
29. New Hampshire	185	246	33	255	4	264	4	2,355	754
30. New Jersey	1,050	2,279	117	1,826	-20	2,436	33	7,645	214
31. New Mexico	442	622	41	707	14	888	26	2,319	150
32. New York	4,144	4,846	17	6,107	26	11,698	92	31,201	167
33. North Carolina	1,752	1,898	8	2,800	48	3,731	33	7,127	91
34. North Dakota	333	344	3	622	81	796	28	1,243	56
35. Ohio	2,699	2,837	5	2,895	2	3,603	24	12,176	238
36. Oklahoma	2,766	3,284	19	4,414	34	5,510	25	8,223	49
37. Oregon	684	860	26	927	8	971	5	3,247	234
38. Pennsylvania	1,745	1,987	14	6,362	220	7,306	15	20,641	183
39. Rhode Island	159	232	46	196	-16	464	137	580	25
40. South Carolina	1,524	1,579	4	1,642	4	2,033	24	3,783	86
41. South Dakota	500	566	13	710	25	721	2	1,837	155
42. Tennessee	2,099	2,404	15	3,436	43	4,054	18	5,410	33
43. Texas	780	765	-2	905	18	1,248	38	12,470	899
44. Utah	739	809	9	1,087	34	1,316	21	4,385	233
45. Vermont	232	292	26	403	38	453	12	567	25
46. Virginia	1,490	1,650	11	2,017	22	2,750	36	7,385	169
47. Washington	2,076	2,473	19	3,369	36	4,969	47	7,106	43
48. West Virginia	969	1,115	15	1,290	16	1,575	22	4,341	176
49. Wisconsin	3,039	3,637	20	4,429	22	4,503	2	9,165	104
50. Wyoming	304	460	51	521	13	529	2	1,072	103

* Estimated from 1965 data.

These tables provide data and analysis for 24 states studied to compare changes in expenditures for major agencies and activities within these states between school years 1962-63 and 1965-66. These data are taken from much more detailed reports than the annual summary of State Boards of Education reports. The major sources were 1) basic annual reports, 2) a study by Munse* of distribution of expenditures in 1962-63, 3) a tabular form used as an interview guide for a consultation with selected state directors and their fiscal officer and 4) other interviews and official reports.

In some instances these data may not completely agree with the data in the previous tables (Tables 1 to 4), because the data came from different sources. In some instances, changes were made in the basic data after these details were collected which were reflected in the Federal summary, but were not available for these tabulations.

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* Op. cit.

Tables 5 to 12 show the amounts and percentage of source offunds of expenditures for school years 1962-63 and 1965-66.

TABLE 5

TOTAL EXPENDITURES FOR ALL VOCATIONAL EDUCATION AGENCIES AND FUNCTIONS--

Amounts (in thousands), Percent by Source, and Percentage Increase from 1962-63 to 1965-66

States studied--Medians and Ranges by region	1962-63				1965-66				% Increase 1963-66
	Amount	Percent from			Amount	Percent from			
		Fed	Sta	Loc		Fed	Sta	Loc	
North East									
Maine	849	19	58	23	2579	41	41	18	94
Massachusetts	11631	8	43	49	26415	19	(a)	(a)	127
New York	23663	16	35	49	77889	24	37	39	215
Pennsylvania	11864	23	16	61	40329	31	18	51	240
Vermont	957	27	25	48	2108	30	43	27	121
Median		19	35	49		30	39	33	127
Range: Lowest		8	16	23		19	18	18	94
Highest		27	58	61		41	43	51	240
South									
Georgia	9164	14	39	47	19721	32	31	37	91
Kentucky	5942	16	80	4	13587	37	50	13	114
Mississippi	4917	21	33	46	11223	38	24	38	126
North Carolina	13378	17	56	27	29676	29	47	24	133
Oklahoma	7286	13	12	75	13056	28	9	63	78
Median		17	39	46		32	31	37	114
Range: Lowest		13	12	4		28	9	13	78
Highest		21	80	75		38	50	63	133
North Central									
Indiana	6380	21	12	67	16042	35	11	54	152
Iowa	5121	28	22	50	8277	38	19	43	77
Nebraska	2145	26	33	41	4390	44	21	35	81
North Dakota	1718	19	48	33	3604	26	48	26	100
Ohio	10705	21	45	34	33123	33	30	37	209
Median		21	33	41		35	21	37	100
Range: Lowest		19	12	33		26	11	26	77
Highest		28	48	67		44	48	54	207

TABLE 5 (cont'd)

States studied--Medians and Ranges by region	1962-63				1965-66				% Increase 1963-66
		Percent from				Percent from			
	Amount	Fed	Sta	Loc	Amount	Fed	Sta	Loc	
West									
California	23056	17	3	80	61068	27	1	72	165
Colorado	2767	21	17	62	6194	38	9	53	123
Idaho	1650	24	39	37	2940	38	23	39	78
Nevada	1099	24	18	58	4763	12	7	81	335
New Mexico	1394	22	14	64	4150	38	6	56	180
Oregon	2337	24	34	42	8046	33	31	36	220
Utah	1736	10	42	48	5990	24	27	49	128
Washington	7679	14	21	65	14397	25	26	49	88
Wyoming	763	23	8	69	740	37	3	60	110
Median		22	18	62		33	9	53	128
Range: Lowest		10	3	37		12	1	36	78
Range: Highest		24	42	80		38	31	81	335
All States studied									
Median		21	33	49		32	24	39	125
Range: Lowest		8	3	4		12	1	13	77
Range: Highest		28	80	80		44	50	81	335

(a) Due to pending litigation, the amounts of state aid to Massachusetts school districts for current expenses for vocational education were not known at the time of this report.

TABLE 6

TOTAL EXPENDITURES FOR ALL STATE LEVEL VOCATIONAL EDUCATION AGENCIES AND FUNCTIONS--

Amounts (in thousands), Percent by Source, and Percentage Increase from 1962-63 to 1965-66

States studied--Medians and Ranges by region	1962-63			1965-66			% Increase 1963-66
		Percent from			Percent from		
	Amount	Fed'l	State	Amount	Fed'l	State	
North East							
Maine	100	49	51	130	50	50	30
Massachusetts	279	61	39	388	71	29	39
New York	929	52	48	5329	17	83	474
Pennsylvania	1053	52	48	1984	44	56	89
Vermont	99	46	54	141	45	55	42
Median		52	48		45	55	42
Range: Lowest		46	39		17	29	30
Range: Highest		61	54		71	83	474
South							
Georgia	565	24	76	877	46	54	55
Kentucky	468	68	32	778	56	44	66
Mississippi	508	46	54	698	47	53	37
North Carolina	815	19	81	1080	40	60	33
Oklahoma	447	47	53	861	48	52	93
Median		46	54		47	53	55
Range: Lowest		19	32		40	44	33
Range: Highest		68	81		56	60	93
North Central							
Indiana	555	42	58	920	45	55	66
Iowa	353	43	57	857	49	51	143
Nebraska	219	39	61	363	40	60	66
North Dakota	127	33	67	352	27	73	177
Ohio	807	78	22	1294	75	25	60
Median		42	58		45	55	66
Range: Lowest		33	22		27	25	60
Range: Highest		78	67		75	73	177

TABLE 6 (cont'd)

States studied--Medians and Ranges by region	1962-63			1965-66			% Increase 1963-66
		Percent from			Percent from		
	Amount	Fed'l	State	Amount	Fed'l	State	
West							
California	1247	56	44	1645	64	36	32
Colorado	358	40	60	569	48	52	58
Idaho	190	11	89	293	26	74	54
Nevada	133	12	88	199	12	88	50
New Mexico	148	20	80	306	56	44	107
Oregon	250	8	92	474	55	45	90
Utah	235	29	71	439	57	43	87
Washington	509	29	71	886	47	53	74
Wyoming	113	50	50	240	76	24	112
Median		29	71		56	45	74
Range: Lowest		8	44		12	24	32
Range: Highest		56	92		76	88	112
All States studied							
Median		43	54		47	53	59
Range: Lowest		8	22		12	24	30
Range: Highest		78	92		76	88	474

TABLE 7

EXPENDITURES FOR OPERATION OF STATE DIVISIONS OF VOCATIONAL EDUCATION--Amounts (in thousands), Percent by Source and Percentage Increase from 1962-63 to 1965-66

States studied--Medians and Ranges by region	1962-63			1965-66			% Increase 1963-66
		Percent from			Percent from		
	Amount	Fed'l	State	Amount	Fed'l	State	
North East							
Maine	87	49	51	88	50	50	1
Massachusetts	279	61	39	354	69	31	27
New York	642	53	47	4977	14	86	675
Pennsylvania	595	54	46	791	61	39	33
Vermont	75	48	52	112	44	56	50
Median		53	47		50	50	50
Range: Lowest		48	39		14	31	1
Highest		61	52		69	86	675
South							
Georgia	424	26	74	709	51	49	67
Kentucky	269	71	29	516	56	44	92
Mississippi	330	61	39	430	52	48	30
North Carolina	426	1	99	718	42	58	69
Oklahoma	330	49	51	664	49	51	101
Median		49	51		51	49	69
Range: Lowest		1	29		42	44	30
Highest		71	99		56	58	101
North Central							
Indiana	120	49	51	235	55	45	96
Iowa	165	50	50	476	50	50	189
Nebraska	134	37	63	188	37	63	40
North Dakota	51	18	82	116	40	60	127
Ohio	387	90	10	539	84	16	39
Median		49	51		50	50	96
Range: Lowest		18	10		37	16	39
Highest		90	82		84	63	189

TABLE 7 (cont'd)

States studied--Medians and Ranges by region	1962-63			1965-66			% Increase 1963-66
	Amount	Percent from		Amount	Percent from		
		Fed'l	State		Fed'l	State	
West							
California	993	59	41	1461	66	34	47
Colorado	215	44	56	273	38	62	27
Idaho	123	2	98	166	13	87	35
Nevada	106	4	96	166	7	93	57
New Mexico	133	18	82	256	56	44	92
Oregon	168	-	100	196	22	78	17
Utah	190	25	75	264	44	56	39
Washington	415	25	75	653	46	54	57
Wyoming	75	53	47	149	93	7	99
Median		25	75		44	56	47
Range: Lowest		0	41		7	7	17
Highest		59	100		93	93	99
All States studied							
Median		49	51		50	50	57
Range: Lowest		0	10		7	7	1
Highest		90	100		93	93	675

TABLE 8

EXPENDITURES FOR TEACHER EDUCATION BY STATE AGENCIES-- Amounts (in thousands), Percent by Source, and Percentage Increase from 1962-63 to 1965-66

States studied--Medians and Ranges by region	1962-63			1965-66			% Increase 1963-66
	Amount	Percent from Fed'l	Percent from State	Amount	Percent from Fed'l	Percent from State	
North East							
Maine	13	46	54	32	50	50	146
Massachusetts	NE	-	-	1	100	-	∞
New York	287	51	49	352	60	40	23
Pennsylvania	458	50	50	1081	29	71	136
Vermont	24	42	58	29	52	48	21
Median		46	50		52	48	85
Range: Lowest		0	0		29	0	21
Highest		51	58		100	71	146
South							
Georgia	141	20	80	168	23	77	19
Kentucky	199	64	36	228	56	44	15
Mississippi	178	19	81	257	38	62	44
North Carolina	389	38	62	362	37	63	-7
Oklahoma	117	41	59	197	42	58	68
Median		38	62		38	62	19
Range: Lowest		19	36		23	44	-7
Highest		64	81		56	77	68
North Central							
Indiana	350	39	61	685	42	58	96
Iowa	186	37	63	310	36	64	67
Nebraska	85	42	58	175	44	56	106
North Dakota	76	43	57	236	21	79	211
Ohio	399	66	34	727	68	32	82
Median		42	58		42	58	96
Range: Lowest		37	34		21	32	67
Highest		66	63		68	79	211

TABLE 8 (cont'd)

States studied--Medians and Ranges by region	1962-63			1965-66			% Increase 1963-66
	Amount	Percent from		Amount	Percent from		
		Fed'l	State		Fed'l	State	
West							
California	254	47	53	184	50	50	-28
Colorado	135	30	70	164	32	68	22
Idaho	67	25	75	127	43	57	90
Nevada	27	45	55	33	33	67	22
New Mexico	15	40	60	50	52	48	233
Oregon	82	23	77	43	46	54	38
Utah	45	47	53	95	56	44	111
Washington	94	48	52	228	50	50	143
Wyoming	38	45	55	91	48	52	139
Median		45	55		48	52	90
Range: Lowest		23	52		32	44	-28
Range: Highest		48	77		56	68	233
All States studied							
Median		42	58		45	55	72
Range: Lowest		0	0		21	0	-28
Range: Highest		66	81		100	79	233

∞ Infinite increase because of base of zero.

TABLE 9

EXPENDITURES FOR VOCATIONAL EDUCATION RESEARCH BY STATE AGENCIES Amounts (in thousands), Percent by Source, and Percentage Increase from 1962-63 to 1965-66

States studied--Medians and Ranges by region	1962-63			1965-66			% Increase 1963-66
		Percent from			Percent from		
	Amount	Fed'l	State	Amount	Fed'l	State	
North East							
Maine	NE	-	-	10	50	50	∞
Massachusetts	NE	-	-	33	91	9	∞
New York	NE	-	-	NE	-	-	-
Pennsylvania	NE	-	-	111	73	27	∞
Vermont	NE	-	-	NE	-	-	-
Median					50	27	∞
Range: Lowest		-	-		0	0	0
Highest		-	-		91	50	∞
South							
Georgia	NE	-	-	NE	-	-	-
Kentucky	NE	-	-	34	59	41	∞
Mississippi	NE	-	-	11	55	45	∞
North Carolina	NE	-	-	NE	-	-	-
Oklahoma	NE	-	-	NE	-	-	-
Median					0	0	0
Range: Lowest		-	-		0	0	0
Highest		-	-		59	45	∞
North Central							
Indiana	85	100	-	NE	-	-	-
Iowa	2	0	100	71	100	0	3450
Nebraska	NE	-	-	NE	-	-	-
North Dakota	NE	-	-	NE	-	-	-
Ohio	21	100	0	28	96	4	33
Median		0	0		0	0	0
Range: Lowest		0	0		0	0	0
Highest		100	100		100	4	3450

TABLE 9 (cont'd)

States studied--Medians and Ranges by region	1962-63			1965-66			% Increase 1963-66
	Amount	Percent from		Amount	Percent from		
		Fed'l	State		Fed'l	State	
West							
California	NE	-	-	NE	-	-	-
Colorado	8	100	0	132	90	10	1550
Idaho	NE	-	-	NE	-	-	-
Nevada	NE	-	-	NE	-	-	-
New Mexico	NE	-	-	NE	-	-	-
Oregon	NE	-	-	165	100	0	∞
Utah	NE	-	-	80	100	0	∞
Washington	NE	-	-	5	40	60	∞
Wyoming	NE	-	-	NE	-	-	-
Median		0			0	0	0
Range: Lowest		0			0	0	0
Range: Highest		100			100	60	1550
All States studied							
Median		0	0		0	0	0
Range: Lowest		0	0		0	0	0
Range: Highest		100	100		100	100	3450

NE No Expenditures

∞ Infinite increase because of base of zero.

TABLE 10

EXPENDITURES FOR VOCATIONAL SCHOOLS' CURRENT EXPENSES
Amounts (in thousands), Percent by Source and Percentage Increase from 1962-63 to 1965-66

States studied--Medians and Ranges by Region	1962-63				1965-66				% Increase 1963-66
		Percent from				Percent from			
	Amount	Fed	Sta	Loc	Amount	Fed	Sta	Loc	
North East									
Maine	1258	16	59	25	1687	25	48	27	34
Massachusetts	10445	6	45	45	17641	13	(a)	(a)	69
New York	21898	11	36	53	57510	12	39	49	119
Pennsylvania	10160	17	13	70	18015	26	11	63	86
Vermont	831	24	22	54	1152	17	37	46	39
Median		16	36	53		17	38	48	69
Range: Lowest		6	13	25		12	11	27	34
Highest		24	59	70		26	45	63	119
South									
Georgia	7771	13	27	60	14713	24	27	49	89
Kentucky	6042	12	84	4	8818	21	72	7	46
Mississippi	4315	17	30	53	5387	31	26	43	25
North Carolina	11876	15	55	30	23107	26	46	28	95
Oklahoma	6677	10	8	82	9178	21	6	73	38
Median		13	30	53		24	27	43	46
Range: Lowest		10	8	4		21	6	7	25
Highest		17	84	82		31	72	73	95
North Central									
Indiana	5495	17	8	75	7507	19	16	65	37
Iowa	4063	25	24	51	7188	35	14	51	77
Nebraska	1857	27	19	54	3097	43	16	41	67
North Dakota	2271	18	47	35	3669	18	54	28	62
Ohio	9474	15	48	37	16659	17	56	27	76
Median		18	24	51		19	16	41	67
Range: Lowest		15	8	35		17	14	27	37
Highest		27	48	75		43	56	65	77

TABLE 10 (cont'd)

States studied--Medians and Ranges by region	1962-63				1965-66				% Increase 1963-66
		Percent from				Percent from			
	Amount	Fed	Sta	Loc	Amount	Fed	Sta	Loc	
West									
California	20593	12	1	87	48537	22	0	78	136
Colorado	2283	17	8	75	4210	33	6	61	85
Idaho	1415	24	32	44	2287	38	18	44	62
Nevada	910	24	9	67	1670	27	3	70	84
New Mexico	1121	20	7	73	2510	39	1	60	124
Oregon	2019	26	28	46	5181	25	33	42	156
Utah	2321	9	36	55	4365	24	14	62	88
Washington	6632	11	18	71	11814	20	27	53	78
Wyoming	650	18	1	81	979	23	0	77	51
Median		18	9	71		25	6	61	85
Range: Lowest		9	1	44		20	0	42	51
Highest		26	36	87		39	33	78	156
All States studied									
Median		17	27	54		24	18	49	77
Range: Lowest		6	1	4		12	0	7	25
Highest		27	84	87		43	72	78	156

(a) Due to pending litigation, the amounts of state aid to Massachusetts school districts for current expenses for vocational education were not known at the time of this report.

TABLE 11

EXPENDITURES FOR VOCATIONAL SCHOOLS' CAPITAL OUTLAY--Amounts (in thousands), Percent by Source, and Percentage Increase from 1962-63 to 1965-66

States studied--Medians and Ranges by region	1962-63				1965-66				% Increase 1963-66
		Percent from				Percent from			
	Amount	Fed	Sta	Loc	Amount	Fed	Sta	Loc	
North East									
Maine	14	100	0	0	842	70	27	3	5914
Massachusetts	908	14	0	86	8387	31	1	68	824
New York	835	99	0	1	11717	89	8	3	1303
Pennsylvania	652	64	0	36	19430	35	21	44	2880
Vermont	26	50	42	8	815	45	51	4	3035
Median		64	0	8		45	21	4	2880
Range: Lowest		14	0	0		31	1	3	824
Range: Highest		100	42	86		89	51	68	5914
South									
Georgia	2644	15	69	16	5327	52	37	11	101
Kentucky	69	52	48	0	4468	67	7	26	6375
Mississippi	94	50	50	0	5012	45	19	36	5232
North Carolina	687	45	55	0	6919	38	44	18	997
Oklahoma	221	50	39	11	3117	44	6	50	1306
Median		50	50	0		45	19	26	1306
Range: Lowest		15	39	0		38	6	11	101
Range: Highest		52	69	16		67	44	50	6374
North Central									
Indiana	330	50	2	48	7674	50	1	49	2225
Iowa	705	35	0	65	1003	50	0	50	42
Nebraska	348	12	88	0	935	50	23	27	169
North Dakota	NE	-	-	-	769	63	9	28	∞
Ohio	424	54	27	19	15171	48	2	50	3478
Median		35	2	19		50	2	49	1197
Range: Lowest		0	0	0		48	0	27	42
Range: Highest		54	88	65		63	23	50	3478

TABLE 11 (cont'd)

States studied--Medians and Ranges by region	1962-63				1965-66				% Increase 1963-66
	Amount	Percent from			Amount	Percent from			
		Fed	Sta	Loc		Fed	Sta	Loc	
West									
California	1216	51	0	49	10886	47	0	53	795
Colorado	NE	-	-	-	1471	50	0	50	∞
Idaho	45	71	29	0	360	46	14	40	700
Nevada	56	46	0	54	2894	3	4	93	5068
New Mexico	124	50	0	50	1087	31	6	63	777
Oregon	67	50	0	50	1812	50	22	28	2604
Utah	151	3	87	10	1366	16	62	22	805
Washington	539	50	0	50	1732	50	0	50	221
Wyoming	f*	50	0	50	387	48	0	52	824
Median		50	0	50		47	4	50	795
Range: Lowest		0	0	0		3	0	22	221
Highest		71	87	54		50	62	93	5068
All States studied									
Median		50	0	15		48	8	42	1303
Range: Lowest		0	0	0		3	0	3	42
Highest		100	88	86		89	62	93	6374

∞ Infinite increase because of base of zero.

* "f" indicates less than $500.

TABLE 12

EXPENDITURES FOR ALL VOCATIONAL SCHOOLS' EXPENSES, BOTH CURRENT AND CAPITAL--Amounts (in thousands), Percent by Source, and Percentage Increase from 1962-63 to 1965-66

States studied--Medians and Ranges by region	1962-63				1965-66				% Increase 1963-66
		Percent from				Percent from			
	Amount	Fed	Sta	Loc	Amount	Fed	Sta	Loc	
North East									
Maine	1272	17	58	25	2529	40	41	19	99
Massachusetts	11353	7	43	50	26028	19	(a)	(a)	129
New York	22733	14	34	52	69227	25	34	41	205
Pennsylvania	10812	20	13	67	38345	30	16	54	253
Vermont	857	24	23	53	1967	29	42	29	130
Median		17	34	52		29	38	35	130
Range: Lowest		7	13	25		19	16	19	99
Highest		24	58	67		30	42	54	253
South									
Georgia	10415	14	37	49	20040	32	30	38	92
Kentucky	6111	12	84	4	13286	36	50	14	117
Mississippi	4409	18	31	51	10399	38	22	40	136
North Carolina	12563	16	55	29	30026	29	46	25	139
Oklahoma	6898	11	9	80	12295	27	6	67	79
Median		14	37	49		32	30	38	117
Range: Lowest		11	9	4		27	6	14	79
Highest		18	84	80		38	50	61	139
North Central									
Indiana	5825	19	7	74	15181	35	8	57	161
Iowa	4768	26	20	54	8192	37	15	48	72
Nebraska	2205	25	30	45	4032	45	17	38	83
North Dakota	2271	18	47	35	4438	26	46	28	95
Ohio	9898	17	47	36	31830	32	30	38	222
Median		19	30	45		37	17	38	95
Range: Lowest		17	7	35		26	8	28	72
Highest		26	47	74		45	46	57	222

TABLE 12 (cont'd)

States studied--Medians and Ranges by region	1962-63				1965-66				% Increase 1963-66
	Amount	Percent from			Amount	Percent from			
		Fed	Sta	Loc		Fed	Sta	Loc	
West									
California	21809	14	1	85	59423	26	0	74	172
Colorado	2283	17	8	75	5681	37	5	58	148
Idaho	1460	26	32	42	2647	39	18	43	81
Nevada	966	26	8	66	4564	12	4	84	374
New Mexico	1245	23	6	71	3597	37	2	61	189
Oregon	2086	27	27	46	6993	32	30	38	235
Utah	2472	9	39	52	5731	22	25	53	132
Washington	7171	14	17	69	13546	24	24	52	89
Wyoming	650	18	1	81	1366	30	0	70	110
Median		18	8	69		30	5	58	148
Range: Lowest		9	1	42		12	0	38	81
Range: Highest		26	39	85		39	30	84	374
All States studied									
Median		18	29	52		31	23	43	132
Range: Lowest		7	1	4		12	0	14	72
Range: Highest		26	84	85		45	50	84	374

(a) Due to pending litigation, the amounts of state aid to Massachusetts school districts for current expenses for vocational education were not known at the time of this report.

Tables 13 to 18 show the percentage distribution of expenditures for major agencies and activities for school years 1962-63 and 1965-66 and the percentage increase during this period.

TABLE 13

PERCENT OF ALL REPORTED VOCATIONAL EDUCATION EXPENDITURES FOR MAJOR AGENCIES AND FUNCTIONS IN 1962-63 AND 1965-66

States studied--together with Medians and Ranges by region	1962-63							1965-66						
	State Agencies				Schools			State Agencies				Schools		
	Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL	Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL
North East														
Maine	6	1	0	7	1	92	93	4	1	f*	5	32	63	95
Massachusetts	2		0	2	8	90	98	1	f	f	1	32	67	99
New York	3	1	0	4	3	93	96	7	f	0	7	16	77	93
Pennsylvania	5	4	0	9	5	86	91	2	3	f	5	48	47	95
Vermont	8	2	0	10	3	87	90	5	2	0	7	39	54	93
Median	5	1	0	7	3	90	93	5	2	f	6	36	59	94
Range: Lowest	2	0	0	2	1	86	90	2	f	0	5	16	47	93
Range: Highest	8	4	0	10	8	93	98	7	3	f	7	48	77	95
South														
Georgia	4	1	0	5	24	71	95	3	1	0	4	26	70	96
Kentucky	4	3	0	7	1	92	93	4	2	f	6	32	62	94
Mississippi	7	3	0	10	2	88	90	4	2	0	6	45	49	94
No. Carolina	3	3	0	6	5	89	94	2	1	0	3	22	75	97
Oklahoma	4	2	0	6	3	91	94	5	1	0	6	24	70	94
Median	4	3	0	6	3	89	94	4	1	0	6	26	70	94
Range: Lowest	3	1	0	5	1	71	90	2	1	0	3	22	49	94
Range: Highest	7	3	0	10	24	92	95	5	2	f	6	45	75	97
North Central														
Indiana	2	6	1	9	5	86	91	2	4	0	6	47	47	94
Iowa	3	4	f	7	14	79	93	5	3	1	9	11	80	91
Nebraska	6	3	0	9	14	77	91	4	4	0	8	22	70	92
North Dakota	2	3	0	5		95	95	2	5	0	7	16	77	93
Ohio	4	4	f	8	4	88	92	2	2	f	4	46	50	96
Median	3	4	f	8	5	86	92	2	4	0	7	22	70	93
Range: Lowest	2	3	0	5	0	77	91	2	2	0	4	11	47	91
Range: Highest	6	6	1	9	14	95	95	5	5	1	9	47	80	96

TABLE 13 (cont'd)

States studied--together with Medians and Ranges by region		1962-63							1965-66						
		State Agencies				Schools			State Agencies				Schools		
		Div Vo Ed	Tch Ed Ag	Re sea rch	TOT AL	Cap Out lay	Cur Ex pen	TOT AL	Div Vo Ed	Tch Ed Ag	Re sea rch	TOT AL	Cap Out lay	Cur Ex pen	TOT AL
West															
California		4	1	0	5	6	89	95	2	0	0	2	18	80	98
Colorado		8	9	f	17	0	83	83	4	3	2	9	24	67	91
Idaho		7	4	0	11	3	86	89	6	4		10	12	78	90
Nevada		10	2	0	12	5	83	88	3	1	0	4	61	35	96
New Mexico		10	1	0	11	9	80	89	7	1	0	8	28	64	92
Oregon		7	4	0	11	3	86	89	3	1	2	6	24	70	94
Utah		7	2	0	9	5	86	91	4	2	1	7	22	71	93
Washington		6	1	0	7	7	86	93	4	2	0	6	12	82	94
Wyoming		10	5		15	0	85	85	9	6	0	15	24	61	85
Median		5	2	0	11	5	86	89	4	2	0	7	24	70	93
Range:	Lowest	4	1	0	5	0	80	83	2	0	0	2	12	35	85
	Highest	10	9	f	17	9	89	95	9	6	2	15	61	82	98
All States studied															
Median		6	3	0	8	5	86		4	2	0	6	24	70	94
Range:	Lowest	2	0	0	2	0	71	83	2	0	0	2	11	35	85
	Highest	10	9	1	17	24	95	98	9	6	2	15	61	82	98

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* "f" indicates a percentage of less than .5%.

TABLE 14

PERCENT OF FEDERAL VOCATIONAL EDUCATION FUNDS EXPENDED MAJOR AGENCIES AND FUNCTIONS IN 1962-63 AND 1965-66

States studied--together with Medians and Ranges by region	1962-63							1965-66						
	State Agencies				Schools			State Agencies				Schools		
	Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL	Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL
North East														
Maine	16	2	0	18	6	76	82	4	2	0	6	55	39	94
Massachusetts	18	0	0	18	13	69	82	5	0	0	5	52	43	95
New York	9	4	0	13	22	65	87	4	1	0	5	58	37	95
Pennsylvania	12	8	0	20	16	64	80	4	2	1	7	54	39	93
Vermont	14	4	0	18	5	77	82	8	2	0	10	59	31	90
Median	14	4	0	18	13	69	82	4	2	0	6	55	39	94
Range: Lowest	9	0	0	13	5	64	80	4	0	0	5	52	31	90
Highest	18	8	0	20	22	77	87	8	2	1	10	59	43	95
South														
Georgia	7	2	0	9	25	66	91	5	1	0	6	41	53	94
Kentucky	18	12	0	30	3	67	70	6	2	f	8	57	35	92
Mississippi	20	3	0	23	5	72	77	5	2	0	7	53	40	93
No. Carolina	1	6	0	7	14	79	93	3	2	0	5	29	66	95
Oklahoma	17	5	0	22	11	67	78	9	2	0	11	36	53	89
Median	17	5	0	22	11	67	78	5	2	0	7	41	53	93
Range: Lowest	1	2	0	7	3	66	70	3	1	0	5	29	35	89
Highest	20	12	0	30	25	79	93	9	2	f	11	57	66	95
North Central														
Indiana	5	10	3	18	12	70	82	2	5	0	7	68	25	93
Iowa	6	5	0	11	17	72	89	7	3	2	12	14	74	88
Nebraska	8	5	0	13	7	80	87	4	4	0	8	24	68	92
North Dakota	2	7	0	9	0	91	91	4	4	0	8	39	53	92
Ohio	15	11	1	27	10	63	73	5	4	f	9	66	25	91
Median	6	7	0	13	10	72	87	4	4	0	8	39	53	92
Range: Lowest	2	5	0	9	0	63	73	2	3	0	7	14	25	88
Highest	15	11	3	27	17	91	91	7	5	2	12	68	74	93

TABLE 14 (cont'd)

States studied--together with Medians and Ranges by region	1962-63							1965-66						
	State Agencies				Schools			State Agencies				Schools		
	Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL	Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL
West														
California	15	3	0	18	16	66	82	6	0	0	6	31	63	94
Colorado	17	17	f	34	-	66	66	4	2	5	11	31	58	89
Idaho	1	4	0	5	8	87	95	2	5	0	7	15	78	93
Nevada	1	5	0	6	10	84	94	2	2	0	4	17	79	96
New Mexico	8	2	0	10	20	70	90	9	2	0	11	23	66	89
Oregon	0	3	0	3	6	91	97	2	2	7	11	37	52	89
Utah	17	7	0	24	2	74	76	8	4	5	17	14	69	83
Washington	9	4	0	13	24	63	87	8	3	0	11	24	65	89
Wyoming	23	10	0	33		67	67	24	7	0	31	31	38	69
Median	9	4	0	13	8	70	87	6	2	0	11	24	65	89
Range: Lowest	0	2	0	3	0	63	66	2	0	0	4	14	38	69
Range: Highest	23	17	f	34	24	91	97	24	7	7	31	37	79	96
All States studied														
Median	11	5	0	18	10	70	82	5	2	0	8	37	53	92
Range: Lowest	0	0	0	3	0	63	66	2	0	0	4	14	25	69
Range: Highest	23	17	3	34	25	91	97	24	7	7	31	68	79	96

TABLE 15

PERCENT OF STATE VOCATIONAL EDUCATION FUNDS EXPENDED FOR MAJOR AGENCIES AND FUNCTIONS IN 1962-63 AND 1965-66

States studied--together with Medians and Ranges by region	1962-63							1965-66						
	State Agencies				Schools			State Agencies				Schools		
	Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL	Di Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL
North East														
Maine	5	1	0	6	0	94	94	4	2	0	6	21	73	94
Massachusetts	2	0	0	2	0	98	98	-	-	-	(a)	-	-	(a)
New York	4	2	0	6	0	94	94	15	1	0	16	4	80	84
Pennsylvania	15	12	0	27	0	73	73	4	11	1	16	56	28	84
Vermont	16	6	0	22	4	74	78	7	2	0	9	45	46	91
Median	5	2	0	6	0	94	94	6	2	0	13	33	60	88
Range: Lowest	2	0	0	2	0	73	73	4	1	0	6	4	28	84
Range: Highest	16	12	0	27	4	98	98	15	11	1	16	56	80	94
South														
Georgia	7	3	0	10	42	48	90	5	2	0	7	31	62	93
Kenticky	2	1	0	3	1	96	97	3	2	f	5	5	90	95
Mississippi	8	9	0	17	3	80	83	8	6	0	14	35	51	86
No. Carolina	6	3	0	9	5	86	91	3	2	0	5	21	74	95
Oklahoma	19	8	0	27	10	63	73	28	10	0	38	17	45	62
Median	7	3	0	10	5	80	90	5	2	0	7	21	62	93
Range: Lowest	2	1	0	3	1	48	73	3	2	0	5	5	45	62
Range: Highest	19	9	0	27	42	96	97	28	10	f	38	35	90	95
North Central														
Indiana	8	29	6	43	1	56	57	6	22	0	28	3	69	72
Iowa	7	10	f	17	0	83	83	14	12	0	26	0	74	74
Nebraska	11	6	0	17	39	44	83	13	11	0	24	23	53	76
North Dakota	4	4	0	8	0	92	92	3	8	0	11	3	86	89
Ohio	1	3	0	4	2	94	96	1	2	f	3	3	94	97
Median	7	6	0	17	1	83	83	6	11	0	24	3	74	76
Range: Lowest	1	3	0	4	0	44	57	1	2	0	3	0	53	72
Range: Highest	11	29	6	43	39	94	96	14	22	f	28	23	94	97

TABLE 15 (cont'd)

States studied--together with Medians and Ranges by region		1962-63							1965-66						
		State Agencies				Schools			State Agencies				Schools		
		Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL	Div Vo Ed	Tch Ed Ag	Research	TOTAL	Cap Outlay	Cur Expen	TOTAL
West															
California		54	17	0	71	0	29	29	61	11	0	72	0	28	28
Colorado		26	36	0	62	0	38	38	30	20	2	52	0	48	48
Idaho		19	8	0	27	2	71	73	21	11	0	32	7	61	68
Nevada		52	7	0	59	0	41	41	46	7	0	53	35	12	47
New Mexico		57	5	0	62	0	38	38	50	11	0	61	30	9	39
Oregon		21	8	0	29	0	71	71	6	3	0	9	17	74	91
Utah		12	2	0	14	12	74	86	9	2	0	11	52	37	89
Washington		20	3	0	23	0	77	77	10	3	0	13	0	87	87
Wyoming		58	34	0	92	0	8	8	17	83	0	100	0	0	0
Median		26	8	0	59	0	41	41	21	11	0	52	7	37	48
Range:	Lowest	12	2	0	14	0	8	8	6	2	0	9	0	0	0
	Highest	58	36	0	92	12	77	86	61	83	2	100	52	87	91
All States studied															
Median		12	6	0	17	0	74	80	9	7	0	16	17	61	84
Range:	Lowest	1	0	0	2	0	8	8	1	1	0	3	0	0	0
	Highest	58	36	6	92	42	98	98	61	83	2	100	56	94	97

(a) Due to pending litigation, the amounts of state aid to Massachusetts school districts for current expenses for vocational education were not known at the time of this report.

TABLE 16

PERCENTAGE INCREASE IN TOTAL FUNDS EXPENDED FOR MAJOR VOCATIONAL EDUCATION FUNCTIONS AND AGENCIES

States studied--together with Medians and Ranges by region	Percentage Increase from 1962-63 to 1965-66							
	State Agency Uses				School Uses			ALL USES
	Div Vo-Ed	Tchr Educ	Res	TOTAL	Cap Outl	Cur Exp	TOTAL	
North East								
Maine	1	146	∞	30	5914	34	99	94
Massachusetts	27	∞	∞	39	824	69	129	127
New York	675	23	NE	474	1303	163	205	215
Pennsylvania	33	137	∞	89	2880	86	253	240
Vermont	49	21	NE	42	3035	39	130	120
Median	33	80	NE	42	2880	69	130	127
Range: Lowest	1	21		30	824	34	99	94
Highest	675	146		472	5914	163	253	240
South								
Georgia	67	19	NE	55	101	89	92	91
Kentucky	92	14	∞	66	6375	46	117	114
Mississippi	30	44	∞	37	5232	25	136	126
North Carolina	69	-7	NE	33	997	95	139	133
Oklahoma	101	68	NE	93	1306	38	79	78
Median	69	19	NE	55	1306	46	117	114
Range: Lowest	30	-7		33	101	25	79	78
Highest	101	68		93	6375	95	139	133
North Central								
Indiana	96	96	NE	66	2225	37	161	152
Iowa	190	67	3450	145	42	77	72	77
Nebraska	40	106	NE	66	168	68	83	81
North Dakota	127	211	NE	177	∞	62	95	100
Ohio	39	82	33	60	3478	76	222	209
Median	96	96	NE	66	1197	68	95	100
Range: Lowest	39	67		60	42	37	72	77
Highest	190	211		177	3478	77	222	209

TABLE 16 (cont'd)

States studied--together with Medians and Ranges by region		Percentage Increase from 1962-63 to 1965-66							
		State Agency Uses				School Uses			ALL USES
		Div Vo-Ed	Tchr Educ	Res	TOTAL	Cap Outl	Cur Exp	TOTAL	
West									
California		47	-28	NE	32	795	136	172	165
Colorado		27	-39	1550	18	∞	85	85	123
Idaho		35	90	NE	54	700	62	81	78
Nevada		57	22	NE	50	5068	84	374	335
New Mexico		92	233	NE	107	777	124	189	180
Oregon		17	38	∞	90	260	156	235	220
Utah		39	111	∞	87	804	88	132	128
Washington		57	143	∞	74	221	78	89	88
Wyoming		99	139	NE	112	NE	51	110	110
Median		47	99	NE	74	777	85	132	128
Range:	Lowest	17	-39		18	221	51	81	78
	Highest	99	233		112	5068	156	374	335
All States studied									
Median		57	75	NE	66	997	77	130	123
Range:	Lowest	1	-39		18	45	25	72	77
	Highest	675	233		472	6375	163	374	335

NE No expenditures

∞ Infinite increase because of base of zero.

TABLE 17

PERCENTAGE INCREASE IN FEDERAL FUNDS EXPENDED FOR MAJOR VOCATIONAL EDUCATION AGENCIES AND FUNCTIONS

States studied--together with Medians and Ranges by region	Percentage Increase from 1962-63 to 1965-66							
	State Agency Uses				School Uses			ALL USES
	Div Vo-Ed	Tchr Educ	Res	TOTAL	Cap Outl	Cur Exp	TOTAL	
North East								
Maine	2	167	∞	33	4100	113	370	310
Massachusetts	43	∞	∞	61	2052	235	520	438
New York	108	43	NE	88	1158	181	430	386
Pennsylvania	51	36	∞	60	1625	186	446	366
Vermont	36	50	NE	39	186	-2	169	146
Median	43	47	∞	60	1625	181	430	366
Range: Lowest	2	36		33	186	-2	169	146
Highest	108	167		88	4100	235	520	438
South								
Georgia	229	39	NE	191	609	252	352	337
Kentucky	51	1	∞	37	8328	153	536	388
Mississippi	10	188	∞	39	4649	119	400	316
North Carolina	4917	-8	NE	185	761	242	319	309
Oklahoma	103	71	NE	96	1135	208	344	290
Median	103	39	NE	96	1135	208	352	316
Range: Lowest	10	-8		37	609	119	319	290
Highest	4917	188		191	8328	252	536	388
North Central								
Indiana	117	386	NE	77	2232	53	382	327
Iowa	190	63	∞	179	103	150	141	145
Nebraska	43	114	NE	73	1012	164	229	208
North Dakota	411	52	NE	129	∞	63	181	176
Ohio	29	88	29	54	3101	90	500	377
Median	117	88	NE	77	1122	90	229	208
Range: Lowest	29	52		54	103	53	141	145
Highest	411	386		179	3101	164	500	377

TABLE 17 (cont'd)

States studied--together with Medians and Ranges by region	Percentage Increase from 1962-63 to 1965-66							
	State Agency Uses				School Uses			ALL USES
	Div Voc-Ed	Tchr Educ	Res	TOTAL	Cap Outl	Cur Exp	TOTAL	
West								
California	65	-23	NE	50	727	318	399	335
Colorado	9	-43	1395	41	∞	265	455	315
Idaho	633	218	NE	280	421	153	176	181
Nevada	200	-8	NE	44	288	106	125	120
New Mexico	500	333	NE	467	448	345	367	377
Oregon	NE	174	∞	1280	2645	146	297	326
Utah	144	152	∞	262	4320	395	487	432
Washington	191	153	∞	181	220	237	232	226
Wyoming	248	159	NE	221	∞	91	253	242
Median	191	153	NE	221	448	237	297	315
Range: Lowest	NE	-43		41	220	91	125	120
Highest	633	333		1280	4320	395	487	432
All States Studied								
Median	106	71	NE	83	1135	153	352	316
Range: Lowest	NE	-43		33	103	-2	125	120
Highest	4917	386		1280	8328	395	536	438

NE No expenditures

∞ Infinite increase because of base of zero.

TABLE 18

PERCENTAGE INCREASE IN STATE FUNDS EXPENDED FOR MAJOR VOCATIONAL EDUCATION AGENCIES AND FUNCTIONS

States studied--together with Medians and Ranges by region	Percentage Increase from 1962-63 to 1965-66							
	State Agency Uses				School Uses			ALL USES
	Div Vo-Ed	Tchr Educ	Res	TOTAL	Cap Outl	Cur Exp	TOTAL	
North East								
Maine	±0	130	∞	28	∞	8	39	39
Massachusetts	2	NE	∞	5	∞	(a)	(a)	(a)
New York	1310	1	NE	896	∞	186	198	236
Pennsylvania	12	236	∞	120	∞	46	343	283
Vermont	62	±0	NE	45	3655	131	330	269
Median	12	66	∞	45	∞	89	264	253
Range: Lowest	0	0		5		8	39	39
Highest	1310	236		896		186	343	283
South								
Georgia	11	14	NE	12	5	93	28	50
Kentucky	193	39	∞	119	900	25	30	33
Mississippi	61	10	∞	36	1913	7	74	68
North Carolina	-1	-6	NE	-3	704	64	99	90
Oklahoma	99	67	NE	90	136	-2	17	37
Median	61	14	NE	36	704	25	30	50
Range: Lowest	-1	-6		-3	5	-2	17	33
Highest	193	67		119	1913	93	99	90
North Central								
Indiana	75	85	NE	58	614	182	189	133
Iowa	187	70	NE	116	NE	33	33	48
Nebraska	39	100	NE	161	-31	37	5	15
North Dakota	67	333	NE	201	∞	85	92	100
Ohio	132	73	∞	86	139	107	108	107
Median	75	85	NE	116	139	85	92	100
Range: Lowest	39	70		58	-31	33	5	15
Highest	187	333		201	614	182	189	133

TABLE 18 (cont'd)

States studied--together with Medians and Ranges by region	Percentage Increase from 1962-63 to 1965-66							
	State Agency Uses				School Uses			
	Div Vo-Ed	Tchr Educ	Res	TOTAL	Cap Outl	Cur Exp	TOTAL	ALL USES
West								
California	22	-32	NE	8	NE	3	3	7
Colorado	41	-33	∞	2	NE	56	56	22
Idaho	20	46	NE	28	278	-8	±0	7
Nevada	51	47	NE	50	∞	-49	97	70
New Mexico	3	167	NE	15	∞	-73	19	17
Oregon	-10	-4	NE	-8	∞	208	262	194
Utah	3	75	NE	14	550	-28	50	45
Washington	13	133	∞	30	NE	161	161	131
Wyoming	-72	124	NE	2	NE	NE	NE	-7
Median	13	47	NE	14	∞	-1	53	22
Range: Lowest	-72	-33		-8		-73	±0	-7
Highest	51	167		50		208	262	194
All States studied								
Median	39	67	NE	36	∞	35	53	50
Range: Lowest	-72	-33		-8		-73	±0	-7
Highest	1310	333		896		208	343	283

NE No Expenditures

∞ Infinite increase because of base of zero.

(a) Due to pending litigation, the amounts of state aid to Massachusetts school districts for current expenses for vocational education were not known at the time of this report.

VIII. CONCLUSIONS AND SUGGESTIONS

This nationwide study of the administration of vocational-technical education at the state level constitutes only the first phase of a proposed three-year project. Each of the five studies reported here requires more in-depth analysis than was possible during the relatively short time-span alloted to the project. However, a wealth of data has been collected which will be subjected to thorough scrutiny during the proposed extension of the project.

Suggestions for further research are presented below, along with those conclusions which can be stated at this time.

The Current Status of the Organization for the Administration of Vocational-Technical Education at the State Level

In attempting to describe the organization and program activities of vocational education at the state level in all 50 states, there is the danger of oversimplification of a complex situation. Among the difficulties of such a study are the lack of standard definitions among states, variation in breadth of activities within a single state division of vocational education, and inconsistencies in reporting. A need for greater standardization in reporting has been found.

Moreover, the new developing occupational clusters for which training is now being provided can not be classified and reported according to the traditional categories. Thus, there appears some necessity for modification of the present classification system.

On the basis of data collected to date, it would appear that in most states vocational education is an integral part of the state's total public education program. This is evidenced by the fact that in most states the State Board of Education also serves as the State Board for Vocational Education, with the chief state school officer as the executive officer of both boards.

There is great variation among the 50 states in the number of professional staff members in the state agency in relation to the number of vocational-technical education teachers in the state. The ratio of state staff to teachers ranges from a low of 1 to 240 to a high of 1 to 9. In-depth study of the differences in these ratios among the states would be invaluable in assessing the influence of state agency philosophy on the size of the ratio and in evaluating the leadership and program development in each state as compared with that of other states.

Study of Perceptions of State-Level Administration of Vocational-Technical Education

It is important to recognize that the findings from this study constitute opinions or impressions which may not necessarily be borne out by fact. However, in administering the state's vocational education program, it would seem to be essential for the State Division of Vocational Education to know how the agency was perceived by its client population as well as by those groups to which the agency is accountable and responsible.

On the basis of results of this study, the following generalizations appear to be appropriate.

The role of the State Division of Vocational Education, which in the past may have been primarily compliance-checking and regulation and secondarily change-leadership, may now need to emphasize, and be expected to emphasize, the change-leadership aspect and diminish the supervision-inspection-regulation aspect.

Social changes are demanding that the SDVE maintain or develop strong dynamic leadership and viable relationships with the local school districts. Sweeping changes in our social and technological founcations may cause perceptions of what the SDVE should do to change rapidly.

Research done within the concept of role and role analysis has provided a growing awareness of the importance of role theory in educational administration. In general, role studies have indicated that when those concerned differ in their perceptions of what a role is or should be, conflicts and a decrease in effectiveness and efficiency may result.

In this study, conflicting perceptions as to the role of the SDVE appeared to exist between the SDVE and the combined group of educators outside the state agency. Generally speaking, the SDVE group perceived a greater need for change toward more leadership activity, more regulation and more involvement of others, than did other groups studied. On the other hand, representatives of local schools, area vocational schools and higher education perceived the SDVE as not providing as much leadership and involvement of others as did the SDVE group itself.

Thus, it would appear that many of the people with whom the SDVE interacts do not perceive the SDVE in the same or similar way. Also, these people seem to hold differing perceptions of what the SDVE should be or should do.

Results from this nationwide study indicate that there may be significant regional differences in the perceptions of the role of the SDVE. Further investigation appears warranted.

It is suggested that additional analyses of the wide array of data collected during this study would be fruitful. No study was made of the important parameters of the sample of respondents to the Group Interview Guide. Investigation of these variables should augment the findings presented in this report. Determining the geographic and demographic differences among groups of respondents should enhance our understanding of some of the factors associated with the perceived role of state divisions of vocational education in their administration of vocational-technical education. Such a study should assist state directors of vocational education assess their own functions and activities and help them to understand more deeply their roles in relation to other groups and individuals in the decision-making process.

Analysis of Selected State Vocational-Technical Education Staff Positions

This pilot study demonstrated the practicality and usefulness of an instrument, such as that designed for the project, to record and classify the daily activities of professional staff members of State Divisions of Vocational Education. The experience gained in designing and applying the "Personal Record of Work Activities" form suggests that continued investigation can prove fruitful--that valid and reliable techniques and procedures for analysis of professional staff activities in State Divisions of Vocational-Technical Education can be developed.

However, the findings from this preliminary study must be viewed as tentative and cannot be generalized to include all State Divisions of Vocational-Technical Education.

Moreover, the combined results of the 16 states studied indicate perceived use of time, not actual use of time. Also, the respondents using the instrument felt, in some instances that activity and focus categories were inadequate or not sufficiently inclusive by definition to properly record their work. Thus, semantic differences among respondents might have further distorted the findings.

With these limitations in mind, the following tentative conclusions can be drawn:

1. State Division of Vocational Education professional personnel perceive that they spend the greatest amount of their time each day in planning activities and the least amount of their time in compliance-checking.

2. These persons also consider that the greatest focus of their daily activities is program design and development, but they feel that the least time is spent in program research.

It is interesting to note that these respondents recorded and classified their daily activities in congruence with their concepts of the actual and ideal role of the SDVE as measured by the Group Interview Guide.

Development of a Format and Criteria for Self-Analysis of State Divisions Vocational-Technical Education

A preliminary draft of a format and criteria for self-analysis of state divisions of vocational-technical education has been developed and field-tested as a result of this study.

The full-scale field test in Pennsylvania, and several discussions with state directors of vocational education and chief state school officers establish, beyond a doubt, the prevailing belief that a need exists for an instrument such as that designed by this study.

Results to date appear to indicate that, in addition to being used for periodic, full-scale, formal self-analysis, the "Format and Criteria" might have equal or greater value for use on a year-around basis as a guide for new and old professional staff of state agencies, for board members, for students and others interested in the administration of vocational-technical education.

Study of Expenditures for Vocational-Technical Education

On the basis of results of this study, it is quite evident that expenditures for vocational-technical education have been increasing from all three of the major sources of funds--Federal, state and local. All funds have increased, but Federal amounts have increased by a much larger percent. It can reasonably be concluded that the Federal government is now a partner of rather equal status with the state in helping local schools provide vocational-education services.

The increase in both state and local funds for vocational education have been impressive, although many expenditures which directly or indirectly benefit vocational education are not reported. Moreover, neither unit costs nor program costs can be determined under present accounting practices. The mechanics for more complete financial reporting are now available.

There is currently emerging a demand for improved planning of vocational-technical education programs utilizing the planning-programming-budgeting system (PPBS). Moreover, there is increased public concern about the benefits accruing from the costs of vocational education. Thus, it appears inevitable that pressures will be increased for more comprehensive planning, conscious attention to goals and their achievement and systematic evaluation.

The implications of these developments for accounting and reporting procedures for the financing of vocational education prompt the following suggestions:

1. States and Federal government jointly should develop standard definitions and terminology related to vocational-technical education.

2. Each state should identify and clearly state goals and objectives of vocational education.

3. Each state should establish valid methods for evaluating progress toward achievement of goals and objectives of vocational education.

4. An accounting and reporting system which will provide complete information regarding the expenditures for, and costs of, all major aspects of vocational-technical education from Federal, state and local sources should be implemented.

5. Expenditures for administration, supervision, research, teacher education and other services ancillary to instruction should be reported separately from those of the school operating agencies--whether they be state, area or local in scope.

6. The most relevant information concerning the benefits of

these programs should be reported, such as numbers enrolled, graduated, placed and continuing in the occupation or related occupation.

Information from the above accounting and reporting procedures should be utilized more consciously and meaningfully in the decision-making and planning process, resulting in a practical program-planning-budgeting system for vocational education programs and services.

IX. SUMMARY

The focus of the project was upon the organization, functions and activities of state-agency administration of vocational-technical education, with the purpose of providing pertinent information to state directors of vocational education and their staffs which might contribute to enhancing their leadership role and improve state agency administration.

A further goal was to develop techniques or instruments for implementing the central purpose stated in the project proposal--"to expedite improvement in the scope, quality and coverage of vocational and technical education in local schools, by increasing the effectiveness of state agency leadership, service and administration in this field of education."

The project was divided into five major studies, each designed to meet one of the specific objectives:

1. To prepare a detailed description of the administration of and services provided for, vocational-technical education in each state, indicating the differences among states in organization, personnel and services provided and identifying trends in administrative functions and activities.

2. To identify and analyze perceptions of what the roles and functions of state agencies for vocational-technical education are and what they should be.

3. To analyze activities of selected professional staff positions in the state agency for vocational and technical education.

4. To design and field-test a format and criteria for self-analysis of state agencies for vocational-technical education.

5. To analyze expenditures for vocational education through the state agency for these programs which are operated in public schools and related to Federal funds provided to states for this purpose, with special emphasis to be given to changes in expenditures following passage of the Vocational Education Act of 1963.

Program Evaluation and Review Technique (PERT) was applied to the total project in order to facilitate the integrated planning and implementation of the five studies.

To the extent possible and practical, data collection for each study was combined. All primary sources of data and some secondary sources were obtained by means of visits to each state. Altogether 40 states and Puerto Rico were visited by project staff. Data collected by means of state visits were: (1) those secured from the Group Interview Guide; (2) those from individual interviews, including both interviews for the perceptions and the expenditures studies; (3) those from completion of the "Personal Record of Work Activity" form; and (4) documents and other materials. The last source of data was obtained also by mail either from the states or from the U.S. Office of Education.

Because each study was designed to meet a single objective, methods of research varied widely among them. Thus, method, results, and conclusions are summarized separately for each study.

Current Status of the Organization for the Administration of Vocational-Technical Education at the State Level

This study was designed to meet the first objective listed above. Data were secured from various secondary sources, including the State Plans, state directories of personnel, job descriptions, state constitutions and statutes, and various official state reports to the Office of Education. These data were organized and tabulated into ten areas: (1) legal basis for the administration of vocational-technical education; (2) selection of state officers for the administration of vocational-technical education; (3) position of vocational-technical education in the state administration of vocational-technical education; (4) organization for the administration of vocational-technical education; (5) professional staff for state administration of vocational-technical education; (6) teachers in vocational-technical programs; (7) enrollments in vocational-technical programs; (8) relationship of teachers to state staff in vocational-technical programs; (9) schools providing vocational-technical programs; and (10) income and expenditures for vocational-technical education.

The study was based on data from school years 1965-66 and 1966-67. The data for 1966-67 were very incomplete, and the data for 1965-66 were not consistent for all states because they were obtained from various sources. During the next phase of the project it is proposed to update (school year 1966-67), validate and obtain reliability for all data in the present study.

This report covers only those vocational-technical education activities which conform to the definition of vocational education as given in the most recent Federal legislation (PL. 88-210).

On the basis of the data collected it would appear that in most states vocational education is an integral part of the state's total public education program. In every state, providing vocational education is required by statute and a legal provision has been made to establish a State Board for Vocational Education. In most states, the State Board of Education has been designated the State Board for Vocational Education. In 45 states the chief state school officer is the executive officer of the State Board for Vocational Education, and in most states (35) the director of vocational education reports directly to the chief state school officer.

There is great variation among the 50 states in the number of professional staff members in the state agency for vocational education in relation to the number of vocational education teachers in the state. The ratios of state staff to teachers range from 1 to 240 to 1 to 9. Although it is difficult to determine a basic reason for this wide variation, a major contributing factor appears to be size of enrollments in vocational education programs. States with small enrollments still must maintain certain basic services which tend to result in relatively high ratios.

Dramatic changes in administration, staffing, and financing vocational-technical education have taken place between the years 1964-65 and 1965-66. To determine whether these changes are unique or whether they indicate a trend will require continued research and updating of data for several subsequent years.

Study of Perceptions of State-Level Administration of Vocational-Technical Education

This study was designed to meet the second objective of the project: to identify and analyze the expectations and perceptions of the roles and functions of state agencies for vocational education as expressed by representatives of various groups of educators, important policy-making groups, relevant lay groups, the state division of vocational education itself and other state agencies.

In developing the research design it was deemed appropriate to divide the study into two parts: the major study, deriving its data solely from the Group Interview Guide; and a second study, utilizing data secured primarily through individual interviews.

The theoretic basis and rationale for the group instrument was that of a general systems approach to the study of the state division of vocational education, implemented by application of the role concept to the analysis of the operation of this state agency.

This investigation was conducted as a field study based upon *ex post facto* research design. For purposes of study, the SDVE was conceived of as a combination leadership-regulatory agency. Leadership and regulation were not thought to be discrete role categories, but as located along a continuum. Involvement was thought to be one dimension of leadership.

Initial development of the Group Interview Guide was completed under a prior study. Further refinement of the instrument was undertaken as a first phase of the current project. The instrument was developed to assess respondent perceptions concerning the present administration of vocational-technical education in state agencies and their concepts of desirable activities in these state agencies. The Group Interview Guide was administered to 1,783 persons in 38 states. These respondents were a purposely selected sample of educators and lay personnel who normally have some knowledge of or relationship with the state division of vocational education.

Stated in general terms, the problem of this study was to analyze selected respondents' perceptions of what "is" and of what "should be" the role of the SDVE. This problem was studied in terms of intergroup responses and consensus on selected items and groups of items. The following questions were examined: (1) How is the SDVE viewed in respect to the dimensions of inspection-regulation and leadership-change? (2) What are the perceived actual and ideal role(s) of the SDVE as expressed by respondents? (3) What are the relationships between the dimensions of leadership-change, inspection-regulation and involvement (both actual and ideal)? Eleven null hypotheses were developed for testing and analysis of these three basic questions.

All data were computer processed and analyses utilizing both single items and clusters of items were performed. The non-parametric chi-square test was used in analysis of single items, analyses of variance were used for analysis of clusters of items, and Pearson Product Moment Correlations were developed among clusters of items.

Seven basic clusters were developed: actual and ideal leadership function; actual and ideal degree of regulation function; present and ideal degree of SDVE involvement function; and attitude toward vocational education. Three additional clusters were derived indicating differences between actual and ideal perceptions of the leadership, regulation and involvement functions. These 10 clusters were tested for reliability and the majority of the reliability coefficients fell between .95 and .80.

Through analysis of variance technique, it was demonstrated that there were no significant differences among responses of representatives of the Advisory Council Group, Legislative group, and State Board of Education groups. Thus, these three groups were combined for some analyses.

Results of analyses indicated that there were significant differences among respondent group scores on the seven basic clusters and on the derived difference clusters. However, no significant differences were found among the responses of representatives of local schools, area schools and higher education, suggesting that level or location of employment of such educators does not determine their responses to the clusters developed by this study. Further analysis indicates that there are significant differences between the SDVE group and other educators.

As a result of generating a correlation matrix of cluster scores, it can be deduced that neither the leadership function nor the regulation function is seen as something discrete, but that they overlap.

Also, findings seem to indicate that those people who perceive that there is involvement by the SDVE, or believe that they are involved in SDVE activities feel that there should be minimum emphasis by the SDVE on regulation.

The SDVE group generally had higher scores than other groups except state-level policy and advisory groups on both actual and ideal leadership, regulation, and involvement and equally lower scores than other groups on the three clusters representing differences between the actual and ideal dimensions of these same measures. If it is accepted that the magnitude of the difference cluster score represents the intensity of need for change, it can be concluded that the SDVE perceived less need for change than did any of the other groups. In other words, this group felt it was doing a good job and felt less need to increase its activities in these three areas than did the other respondents.

The groups most critical of SDVE activities were the representatives of local schools, area schools and higher education. The groups which seemed to feel that the SDVE was doing all that it should be doing were the representatives of the State Board of Education, the State Advisory

Council and the State Legislature. However, these latter groups appeared to expect more, not fewer, regulation activities by the SDVE than did the SDVE itself.

The second perceptions study, based upon responses from individual interviews, investigated four major areas: the public image of the SDVE; the staff of the SDVE; relationships of the SDVE with other agencies; and the quality, availability and scope of vocational-technical education programs. A total number of 432 interviews were held in 38 states and Puerto Rico.

The following conclusions appear warranted:

1. In general, state divisions of vocational education enjoy a positive public image.

2. Relationships with the State Department of Education appear to be strong. In states where the SDVE is part of the SDE, it appears to be well-integrated with other units of the State Department of Education.

3. There is general feeling among all groups that vocational-technical education must be made available to more youth and adults. Moreover, there appears to be sentiment for developing new occupational training opportunities--that too many of the existing programs tend to be traditional.

4. Respondents tended to perceive the need for more involvement of the public in planning and other SDVE activities.

5. Among the five groups studied (SDVE, SDE, other educators, lay policy makers, and other state agency personnel), the group most critical of SDVE operations and vocational-technical education programs was that composed of educators outside the state agencies for education.

6. In comparing the response patterns of SDVE respondents with those of the respondents representing the office of the chief state school officer, it would appear that the SDVE group is less confident about the job it is doing than is the group to which it is immediately responsible.

Results from this nationwide study of perceptions have demonstrated that there are significant differences among groups. No attempt was made to discover if there are regional differences. Disparities in mean cluster scores from the Group Interview Guide between the two samples of respondents indicate that there may be geographic or regional differences.

It is suggested that further analyses of the wide array of data collected during this study would be fruitful. No study was made of the important parameters of the sample of respondents in the Group Interview Guide. Investigation of these variables should augment the findings presented in this report. Determining the geographic and demographic differences among groups of respondents should enhance our understanding of some of the factors associated with the perceived role of state agencies for vocational-technical education. Such a study should assist state directors of vocational education assess their own functions and activities in relation to their client groups as well as to those groups to which the state agency is accountable and responsible.

Analysis of Selected Professional Staff Positions within the SDVE

The purpose of this study was to develop techniques and procedures for analysis of professional staff activities and functions in State Divisions of Vocational-Technical Education by means of a pilot study. Sixteen states participated in the study. They were neither a random nor a stratified representative sample of states, so that results of the study cannot be generalized to include the population of the 50 state divisions of vocational-technical education in the United States. However, it was not the purpose of the study to attempt to assess nationwide what the daily activities of professional personnel in these agencies, in fact, were.

An instrument, "Personal Record of Work Activity" was designed. It had three major dimensions: the kinds of people with whom professional staff personnel interact; the kinds of actions or decisions in which professional staff personnel are involved; and the focus of concern in carrying out a particular action.

Each participant completed the instrument every day for 14 consecutive days. The forms were mailed to the project office daily. A total of 105 SDVE professional staff members participated in the study: 16 state directors, 15 supervisors of agriculture education, 16 supervisors of business and office education, 11 supervisors of distributive education, 16 supervisors of homemaking education, 15 supervisors of technical and industrial education, and 16 supervisors of manpower development and training. The completed forms were machine data processed.

Results indicate that substantial differences in the time spent with various types of people exist among the various program groups and between the supervisors and the directors. For example, the range in the proportion of reported time spent with teachers was about 9% by MDTA supervisors to almost 61% by Business and Office Education supervisors.

Among the 16 "action" activities, all groups reported that the major portion of their time was spent in planning, consulting, communicating and travel. The least amount of time was spent in compliance checking and statistical research.

When average percent of total daily time was categorized according to the focus of the activity, all groups indicated that their major foci were problem identification and definition and program design and development.

It would appear from the results obtained in this pilot study that further investigation can prove fruitful--that valid and reliable techniques for self-analysis of professional staff activities in state divisions of vocational-technical education can be developed.

Development of a Format and Criteria for Self-Analysis of State Divisions of Vocational-Technical Education

The purpose of this study was to improve the scope and quality of vocational-technical education by strengthening agencies responsible for state-level administration of such education. The intent was to provide a flexible instrument and not to prescribe any single type of administrative pattern. Thus, the immediate objective was to design, develop, field-test, and begin refinement of an instrument specifically to meet the needs for self-analysis by state agencies for vocational-technical education.

An interdisciplinary approach was deemed essential to the development of viable criteria. It was also felt that the state directors themselves should provide the guiding philosophy for the procedure and the criteria.

A workshop was held to establish some guidelines, achieve orientation and identify a mass of raw material to be sifted and refined for use as a nucleus for procedures and principles to be included in the initial drafts of the planned "Format and Criteria for Self-Analysis by State Agencies for Vocational-Technical Education."

Several drafts of the instrument were prepared, reviewed, and revised.

Eventually, a draft was deemed ready for a full-scale field test, which was completed in Pennsylvania. On the basis of this experience, the instrument will be subjected to further revision and refinement.

Evidence indicates that there is a need for a "Format and Criteria", and that the type of instrument developed in this study is appropriate. The belief that such an instrument would facilitate the improvement of vocational-technical education through improved state-level administration has been reinforced by experience to date.

Study of Expenditures for Vocational-Technical Education

This study focused upon the expenditures for vocational education through the state agency for those programs which are operated in public schools and related to Federal funds provided to states for this purpose. Specifically, the study was concerned with: (1) state expenditures in support of vocational-technical education programs including state funds for local, area vocational schools, colleges or institutes; (2) the financing of state agencies for vocational education, including agencies for administration and supervision, teacher education and research.

Some information was gathered for all 50 states, but a more detailed analysis was made of 24 states. This detailed study was essentially a comparison of expenditures for 1962-63 and 1965-66.

Findings

1. Increase in Federal funds for vocational education.

Among the 24 states studied the median increase in Federal expenditures between 1963 and 1966 eas 316%. Among all 50 states, the total increase between 1963 and 1966 was slightly more than 331%. The actual expenditures in 1964-65 and in 1965-66 were undully high because these were the first years Federal vocational education funds could be used for construction or major equipment, and many states considered equipment and buildings as their major immediate need.

2. Increase in state funds for vocational education.

The increase in both state and local funds for vocational education since 1963 has been impressive, but it would be much more impressive if the total funds were known. The limited evidence available indicates that the increase in state and local funds devoted to vocational-technical education in community colleges was substantial, but these expenditures were not reported.

3. Increase in total expenditures for vocational education.

The total expenditures for vocational-technical education more than doubled between 1962-63 and 1965-66 on the basis of all measures used.

4. Funds for the operation of State Divisions of Vocational Education.

From 1962-63 to 1965-66 the median increase in expenditures for state education agencies was the least of any of the agencies or functions identified in the study. Among the 24 states studied it would appear that support for the operation of state agencies is about equally divided between Federal and state funds.

5. Expenditures for teacher education by state agencies.

The median increase between 1962-63 and 1965-66 in Federal funds for teacher education among the 24 states was 72%. In both years the division of support between Federal and state funds remained about the same--45% Federal and 55% state.

6. Funds for vocational education research by state agencies.

Of the 24 states studied, only four showed any expenditures for research in 1962-63 while 11 reported such expenditures in 1965-66. However, the total amounts devoted to research in vocational education remained small in all cases.

7. Funds for capital outlay for vocational education.

Federal funds were heavily involved in the large median increase (99%) between 1963 and 1966 in expenditures for vocational school capital outlay. In 1965-66 the median state of the 24 states studied used 37% of its vocational education funds for this purpose, while in 1962-63 it used only 10% of the much smaller Federal aid for capital outlay.

8. Federal funds for vocational schools.

In 1965-66, 92% of all Federal aid for vocational education was used for schools (either for capital or current expense). No state among the 24 studied used less than 69% of its Federal aid for this purpose.

It can be reasonably concluded that the Federal government is now a partner of rather equal status with the state in helping local schools provide vocational education services. From the extensive study of 24 states we find in the median state that Federal funds provide 32%, state funds, 24% and local school districts, 39%.

However, total expenditures for vocational education remain unknown. Moreover, neither unit costs nor program costs can be determined under present accounting practices. The mechancis for such financial reporting are now available. Administrative decisions necessary to quantify program, supervision and service factors must now be made in order to develop such accounting procedures.

There is currently emerging a new concern that vocational educational planning be characterized by (1) more insight into goal identification, (2) use of more concrete information as a basis for decision-making, and (3) studies in which the more subtle input-output factors are related in analyses of alternative programs and uses of resources. Planning-programming-budgeting system (PPBS) is the result of these concerns.

Application of PPBS to the accounting and reporting procedures of vocational-technical education should contribute greatly to the decision-making and planning process, resulting in more meaningful vocational-technical education programs and services.

This Nationwide Study of the Administration of Vocational-Technical Education at the State Level represents only the first phase of a proposed three-year project. Hence, few definite conclusions could be reported. Each of the five studies reviewed above required more in-depth analysis than was possible during the relatively short time-span provided for the project. Suggestions for further research have been present along with the findings from each of the five studies.

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